Canovision 8

- * • Use with MC-4B MECH. CHASSIS service manual (DY8-3391-501-201) for repairing of mech. chassis part.
- • For lens and adopters, refer to the service manuals issued separately.

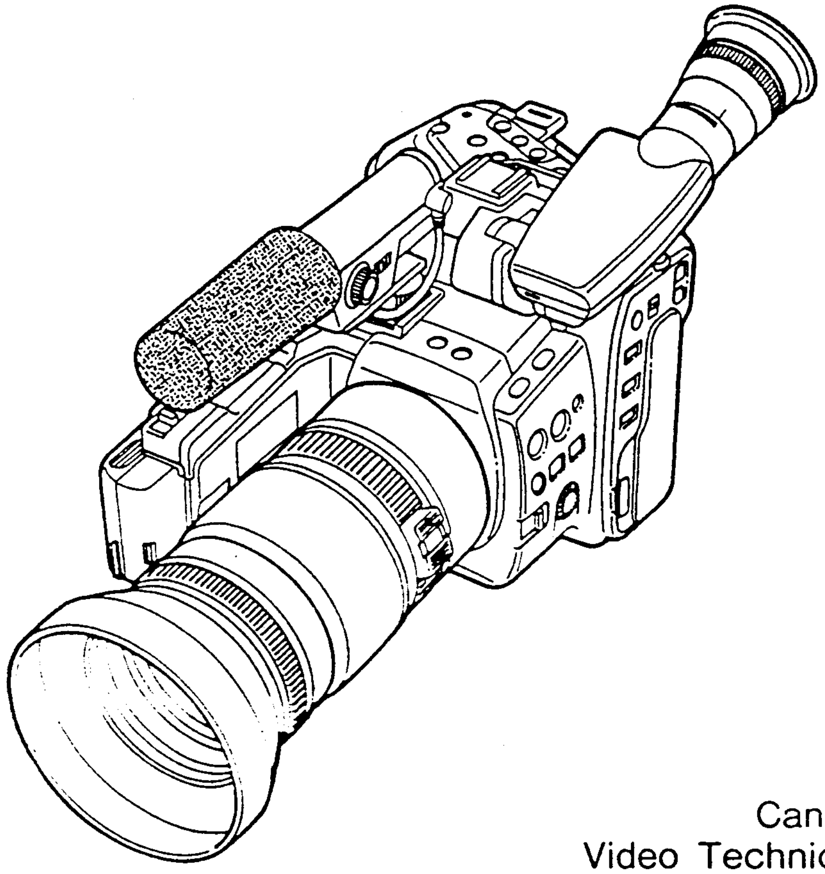
SERVICE MANUAL

EX2HiE

(REF. NO. D16-0430)

PAL

8mm Video Camera & Recorder



DY8-1160-430-000

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Canon Inc.
Video Technical Service Dept.
First Edition: Nov. 1993
Printed in Japan

SAFETY PRECAUTIONS

The following precautions should be observed when servicing.

1. Since many parts in the unit have special safety-related characteristics, always use genuine CANON replacement parts.

   Especially critical parts in the power circuit block should not be replaced with other makes.

   Critical parts are marked with ⚠ in the schematic diagrams.
2. The primary source of X-ray radiation in this viewfinder is the picture tube. The tube used in the viewfinder is especially constructed to limit X-ray radiation emission. For continued X-ray radiation protection, the replacement tube must be same type as the original, CANON approved one.
3. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been oberheated or damaged by the short circuit.
4. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
5. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

5-1 Leakage Current Cold Check

1) Unplug the AC cord and connect a jumper between the two prongs on the plug.
2) Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metalic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metalic part has a return path to the chassis, the reading should be between 1MΩ and 5.2MΩ. When the exposed metal does not have a return path to the chassis, the reading must be ∞.

5-2 Leakage Current Hot Check

1) Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2) Connect a 1.5KΩ 10 watt resistor, paralleled by 0.15μF capacitor, between each exposed metalic parts on the unit and a good earth ground such as a water pipe, as shown in the figure below.
3) Use an AC voltmeter, with 1000Ω/volt or more sensitivity, to measure the potential across the resistor.
4) Check all exposed metallic parts of the cover (Cable connection, Handle bracket, metallic cabinet. Screwheads, Metallic overlays, etc), and measure the voltage at each point.
5) Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6) The potential at any point should not exceed 0.75V RMS.

   A leakage current tester (FLUKE MODEL: 8000A equivalent) may be used to make the hot checks.

   Leakage current must not exceed 0.5 milliamp.

   In case a measurement is out side of the limits specified, there is a possibility of a shock hazard, and corrective action must be taken before returning the instrument to the customer.

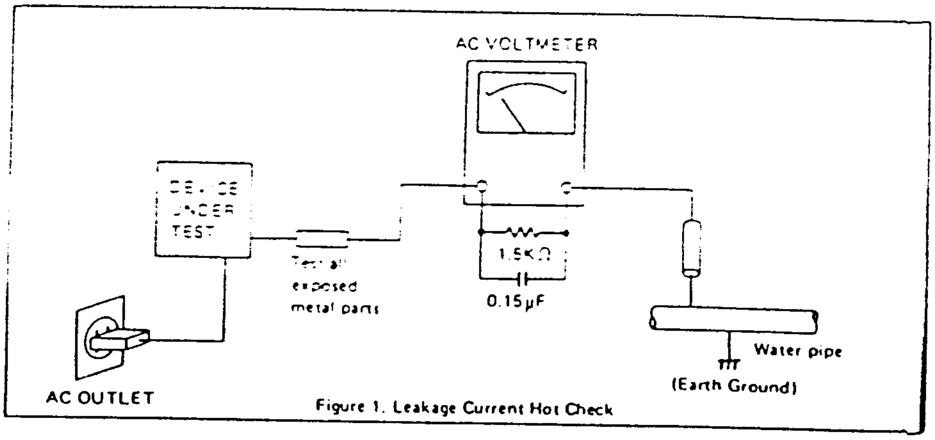

Figure 1. Leakage Current Hot Check

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1. Product Overview

Based on the preceding Model EX1Hi, this 8-mm video camcorder is designed to provide the state-of-the-art editing features including the RC time code/data code function and index function. Through LANC connection with a commercial RC time code editing unit, it enables the user to accomplish precise frame-by-frame editing.

This camcorder is standard-equipped with the remote controller having a shuttle ring, which is a first in its class. By turning the shuttle ring, the user can easily play back pictures at still framing, forward/reverse slow motion, forward/reverse 1x motion, forward/reverse 2x motion, fast-forwarding, or rewinding. Also, using the RC time code function, an image search can be carried out on a frame-by-frame basis.

1-1 Comparison with Model EX1Hi

1-1-1 Functions

Table I-1

Function	Model EX1Hi	Model EX2Hi
Hi8/normal format	Hi8/normal format selectable Hi8/normal format recording available in use of Hi8 tape	Hi8/normal format selected automatically Automatic format selection for videotape
Timer recording	o	x
Line in recording	x	o
Reverse slow playback	x	o
Reverse playback	x	o
Forward/reverse 2x motion playback	x	o
Index search/scan	x	o (Operation through remote controller)
Date search/scan	x	o (Operation through remote controller)
RC time code	x	o
Data code	x	o
Fine edit mechanism	x	o
Shuttle ring	x	o
Power consumption	Approx. 8.6 W	Approx. 8.8 W

1-1-2 Major component units

Table I-2

Component		Differences from Model EX1Hi
Housing		The external color and printed characters have been changed, and the some keys have been changed.
Camera section	CCD	Newly designed (sensitivity: 6 dB up).
	AF P.C.B.	Some requirements for adjustment at plant have been changed.
	PROCESS 1, 2 P.C.B.	The LH1 circuit has been removed because of the newly designed CCD. Some parts have been changed.
	C-KEY 1 P.C.B.	The INDEX MARK key has been added.
	C-KEY 2 P.C.B.	Identical
Recorder section	SYSCON-SERVO P.C.B.	The RC time code circuit has been added. The PB-RF detection circuit and the SP/LP detection circuit for searching have been added. (For RCTC control) The main and SERVO microcomputers have been designed newly. The E^2PROM IC for microcomputer adjustment data has been added. The DSP 5 V adjustment has been eliminated.
	VIDEO P.C.B.	The I/O IC, DSP IC, and character generator switching IC have been changed. (The character position adjustment (2) has been added.) The VIDEO 5 V adjustment has been eliminated.
	VIDEO SUB P.C.B.	Identical
	R-KEY 1 P.C.B.	The KEY microcomputer, LCD, and power IC have been changed.
	R-KEY 2 P.C.B.	Identical, except that the following key functions have been replaced. SW1905 ..... TIMER → COUNTER/TC SW1906 ..... LINE IN/OUT (NTSC) → SP/LP (PAL) SW1907 ..... Hi8 [SP/LP (PAL)] → LINE IN/OUT
	TERMINAL P.C.B.	The number of connector pins has been changed.
	AUDIO 1, 2 P.C.B.	Identical
	RECORDER MECHA.	Identical, except that the HEAD AMPLIFIER P.C.B. has been changed.
EVF	EVF P.C.B.	Identical

2. New Technologies

2-1 Time code function

The time code function is used to record a count value for each video signal frame on tape (NTSC: 30 frames per second, PAL: 25 frames per second). In the conventional camcorders, tape counting has been performed using the capstan/reel frequency generator to cause a slight error in fast forwarding or rewinding. Compared with the conventional tape counting, the time code function does not produce a count error since the count data is recorded per frame on tape. In most types of the professional/ broadcasting VTRs, the time function is incorporated to meet accuracy requirement for tape editing.

2-1-1 Rewritable consumer time code (RCTC)

In the 8mm videotape format, each track has the video recording region and the PCM audio recording region as shown below. The V-P guard (video-PCM protective area) is provided along the boundary of these regions. With RC time coding, biphase-modulated digital data is written onto the V-P guard area in the same manner as for PCM audio signals. This technique allows entry of time codes even on the previously recorded tape, i.e. the time codes are rewritable as implied by 'R' of RCTC.

Note that the lower part of the monitor screen is masked when the time codes are after-recorded.

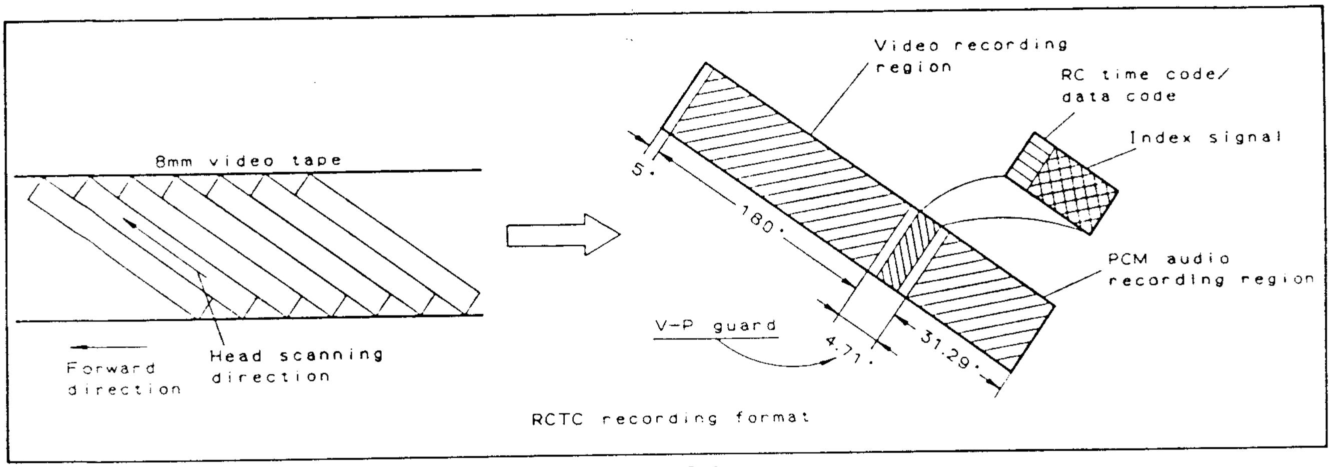

8mm video tape
Forward direction
Head scanning direction
Video recording region
RC time code/ data code
Index signal
PCM audio recording region
V-P guard
5.
180.
4.71.
31.29.
RCTC recording format

Fig. I-1

(1) RC time code recording format

Figure 2 shows the RC time code recording format. The RC time code recording area is provided after the index signal recording area. Between the start and end words, five words of data (40 bits) are recorded together with the CRCC byte (error detection byte).

Table 1 presents the allocation of 5-word data. In the present arrangement, the date recorded (year, month, day), time recorded (hours, minutes, seconds), or chapter data can be recorded can also be recorded in lieu of the time code.

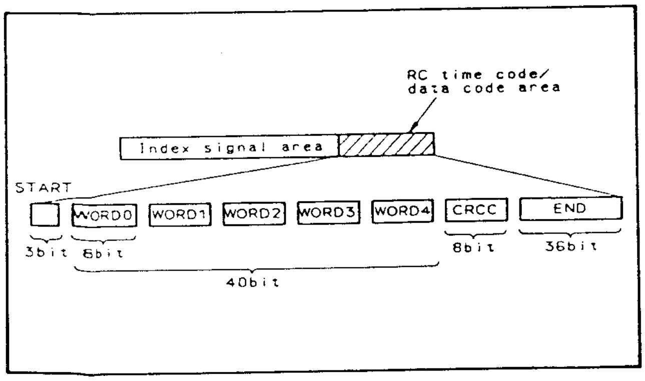

RC time code/ data code area
Index signal area
START
WORD0
WORD1
WORD2
WORD3
WORD4
CRCC
END
3bit
6bit
8bit
36bit
40bit

Fig. I-2

Table I-3

RC time code/data code recording arrangement

WORD 0	WORD 1	WORD 2	WORD 3	WORD 4
RC time code	Hours	Minutes	Seconds	Frame
Data code: Date recorded	Year	Month	Day	-
Data code: Time recorded	Hours	Minutes	Seconds	-
Chapter data				

(2) Difference from professional/boradcasting-use 8mm time code scheme

The professional/broadcasting-use 8mm time code scheme is structured on the precept that PCM recording is possible. Therefore, the time code is recorded on the vicinity of PCM region in a different format. That is, the RC time code scheme employed in this camcorder is not compatible with the professional/broadcasting-use time code scheme.

(3) Relationship with Sony RC time code scheme

In the RC time code scheme adopted for this comcorder, the tape pattern and data format are arranged to be identical with those of the Sony RC time code scheme. Therefore, these RC time code schemes are compatible with each other. It is possible to read and enter the time codes compatibly between these RC time code formats.

Also, the Canon RC time code scheme is compatible with the time and data coding of the 8mm video sub-code format (single-block 8mm video sub-code format only).

* 8mm video sub-code format

The 8mm video sub-code format is an optional specification video format that was published in February, 1992. It has upward compatibility with a variety of existing code formats. In addition to the above-mentioned time code, the 8mm video sub-code format includes the data code/index signal for date and time recording, the video control code for automatic fast-forwarding through particular recorded sections in playback, etc.

(4) Other time code formats

° LTC (Longitudinal Time Code) format	The time code is recorded on the dedicated track using the stationary head.
° VITC (Vertical Interval Time Code) format ...	The time code is inserted during a vertical blanking interval of video signal. Using the rotary head, it is recorded together with the video signal.

2-1-2 Use of RC time code and data code

Using the RC time code/data code function, a count value (elapsed time period) and date/time recorded can be automatically written per video signal frame onto tape during recording. In playback, the RC time code/data code can be read out. So, it is possible to use the RC time code/data code as described below.

(1) Use of RC time code

1) Enhancement of accuracy in video editing

In contrast with the conventional linear time counting that indicates a relative elapsed time (hours:minutes:seconds) with respect to a certain point on tape, the RC time coding indicates an absolute elapsed time (hours:minutes:seconds:frame) recorded on tape. Therefore, with the RC time code, a count error does not occur even in fast-forwarding or rewinding. In case that LANC connection is made with the 'RC time code compatible' video editing unit *1, it is possible to attain accuracy of editing within ±5 frames.

*1: RM-E500/RM-E700
(Sony video editing unit: Having the tape counter compatible with the RC time code format, it can control tape movement frame by frame.)

Recording unit:
Stationary-type Hi8 VTR supporting the fine synchronous edit feature *2, VTR having the LANC terminal *2, or 'Infrared remote control type' recording unit *3

*2: North American version: EV-S2000 (Sony: 8mm video deck)
European version : SLV-825/SLV-725 (Sony: VHS video deck)

*3: Using the timing adjustment tape furnished with the editing unit, it is required to adjust cut-in/out timing.

Still more, even for the recorded tape on which no RC time code was written, the RC time codes can be entered using the time code insert function. Thus, video editing can be carried out with high accuracy.

2) Easy cuing with high accuracy

Using the RC time code value, a particular scene can be located anywhere on tape. Since the RC time code value can be indicated on the viewfinder screen or TV screen during recording, playback, fast-forwarding or rewinding, a desired videographed scene can be found out easily in a short time.

(2) Use of data code

1) In playback, the date and time recorded can be displayed on the TV screen as required. Unlike the conventional auto date recording function (superimposing function), the new method allows the user to hide the date/time in playback as desired.

2) Using the date scan/search function, it is possible to perform date-by-date scanning (the recorded pictures are played back for approx. 10 seconds each time the recorded date code is changed) and cue-up playback using the relative date number.

For instance, in case that a video diary of children has been created on a single videotape cassette, the user can browse through pictures using the data scan function or perform cue-up playback using the data search function.

2-1-3 Entry of RC time codes

The RC time codes can be written onto any videotape recorded with other 8mm camcorder or stationary VTR unit as well as that recorded with this camcorder.

RC time code input procedure:

1) Press the STOP key to set up the stop mode.

2) Rewind the tape back to the its beginning, and select the playback pause mode.

3) Press the TIME CODE INSERT key on the remote controller. 'TC INSERT' will then blink on the viewfinder screen.

4) Press the PLAY ▶ KEY OR PAUSE ⏸ key to start playback. 'TC INSERT' is changed to steady indication, and the time codes are written starting from 0:00:00:00. When the RC time codes are written up to the end of tape, the tape is automatically rewound and then the stop mode is set up.

To cancel entry of RC time codes in the course, press the STOP key.

* For time code entry on the videotape cassette that has RC time codes up to any intermediate point, set up the still playback mode at the part holding RC time codes, press the TIME CODE INSERT key, and then start playback. In this case, the new RC time codes are written sequentially to those recorded already on tape.

If new RC time codes are written starting from a part where no RC time code has been recorded, time coding begins with 0:00:00:00. In this case, entry of RC time codes is started from a location preceding the point of time code insertion (approx. two seconds before).

(To change the linear time count indication to the time code indication on the viewfinder/monitor screen, press the COUNTER/TC switch equipped above the LINE IN/OUT switch on the left cover.)

* ° During the period of RC time code indication, counter reset and a tape return functions are not operable.
  ° When the RC time code is after-recorded, the lower part of playback picture is masked, and the sound is muted.

2-2 Index function

The index function is designed to record the index signal before the RC time code/data code signal on tape. With this function, the user can perform index searching (cue searching) or index scanning (picture browsing). The index signals can be written during recording or playback (on recordable tape).

Described below are the index search and scan operations.

° Index search

For index searching, select the index number corresponding to a desired point on tape, and press the FF or REW key. Thus, the tape is searched for the specified index number. Upon detection of it, playback is started.

Note: Index numbers are variable depending on the current location on tape. An index position relative to the current location on tape is used in index search operation.

Example) Search for index 02

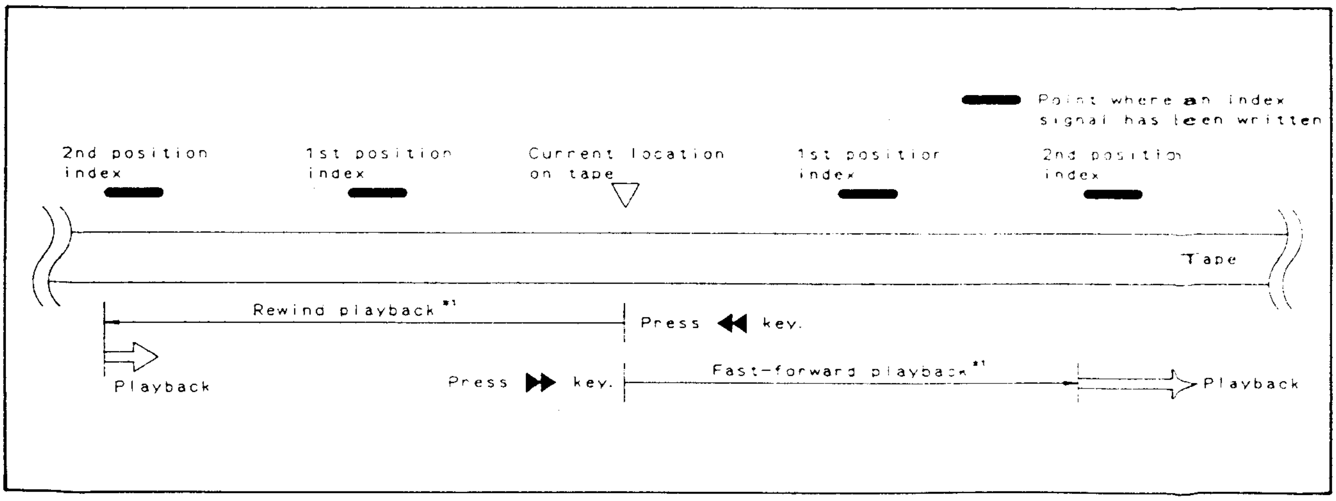

Point where an index signal has been written
2nd position index
1st position index
Current location on tape
1st position index
2nd position index
Tape
Rewind playback *1
Press ◀◀ key.
Playback
Press ▶▶ key.
Fast-forward playback *1
Playback

Fig. I-3

*1: If the FF or REW key is pressed in the playback/still playback mode for searching, fast-forward or rewind playback is performed. If the FF or REW key is pressed in the stop mode for searching, fast-forwarding or rewinding is performed.

° Index scan

Pictures are played back for approx. 10 seconds starting from each point of recorded index signal, and other pictures are skipped over.

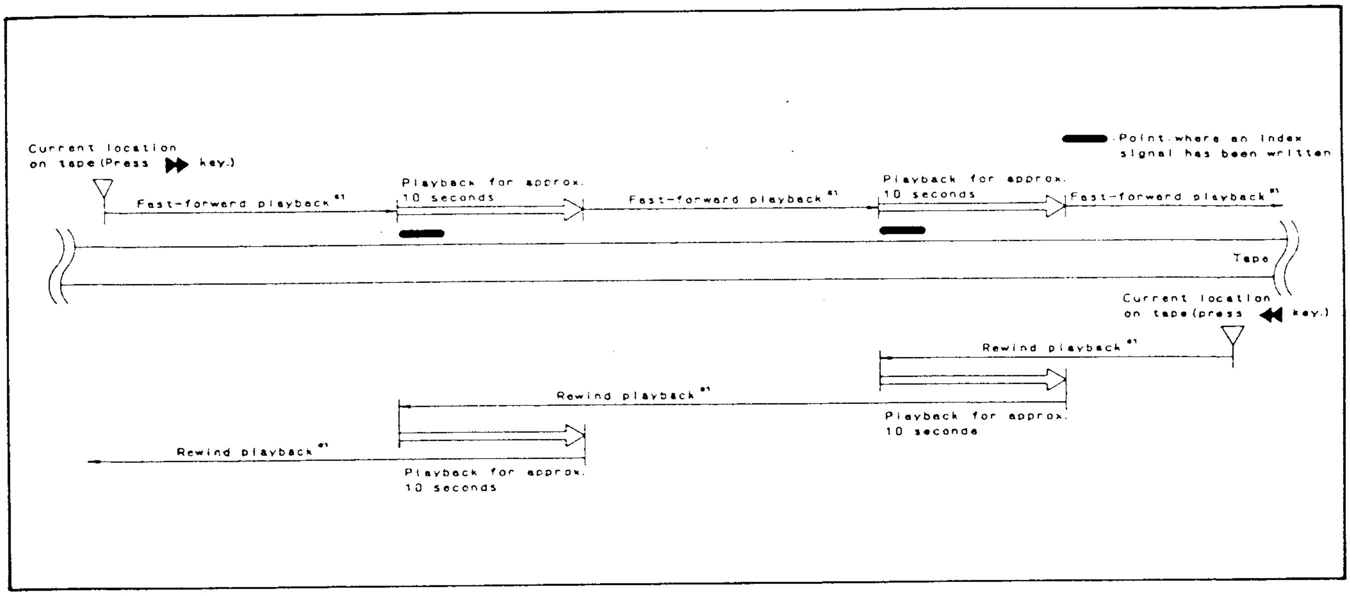

Current location
on tape (Press ⏩ key.)
Fast-forward playback *1
Playback for approx.
10 seconds
Fast-forward playback *1
Playback for approx.
10 seconds
Fast-forward playback *1
Point where an index
signal has been written
Tape
Current location
on tape (press ⏪ key.)
Rewind playback *1
Playback for approx.
10 seconds
Rewind playback *1
Rewind playback *1
Playback for approx.
10 seconds

Fig. I-4

2-2-1 Operating procedures

° How to write index signals

The index signals can be written during recording or playback.

1) For writing index signals from the start of recording/playback

1. In the record pause mode or the still playback mode, press the INDEX MARK key on the main unit or remote controller. 'INDEX MARK' blinks on the viewfinder screen ('MARK' blinks on the LCD display).

2. When recording or playback is started, the index signal is written and 'INDEX MARK'/'MARK' becomes to be indicated steadily. Then, on completion of index signal entry (for approx. 10 seconds), 'INDEX MARK'/'MARK' disappears.

2) For writing index signals during recording/playback

1. During recording or playback (normal playback), press the INDEX MARK key on the main unit or remote controller when a desired point of index signal input is reached. 'INDEX MARK'/'MARK' is indicated on the viewfinder screen (LCD display). On completion of index signal entry (for approx. 10 seconds), 'INDEX MARK'/'MARK' disappears.

* An interval between index signals should be at least two minutes on tape. If this interval is too short, the index signal may not be detected correctly.

* During index signal input (while 'INDEX MARK'/'MARK' is indicated), do not stop recording or playback operation. If recording/playback operation is stopped before completion of index signal entry, the index signal will not be written correctly (not detectable).

* If the index signal is written onto the tape where data codes have been recorded, the data code is deleted at a part on which the index signal is entered.

° How to carry out index scanning/searching

1) In the playback, still playback or stop mode, press the INDEX key on the remote controller. Thus, the index scan/search ready state can be set up as shown below.

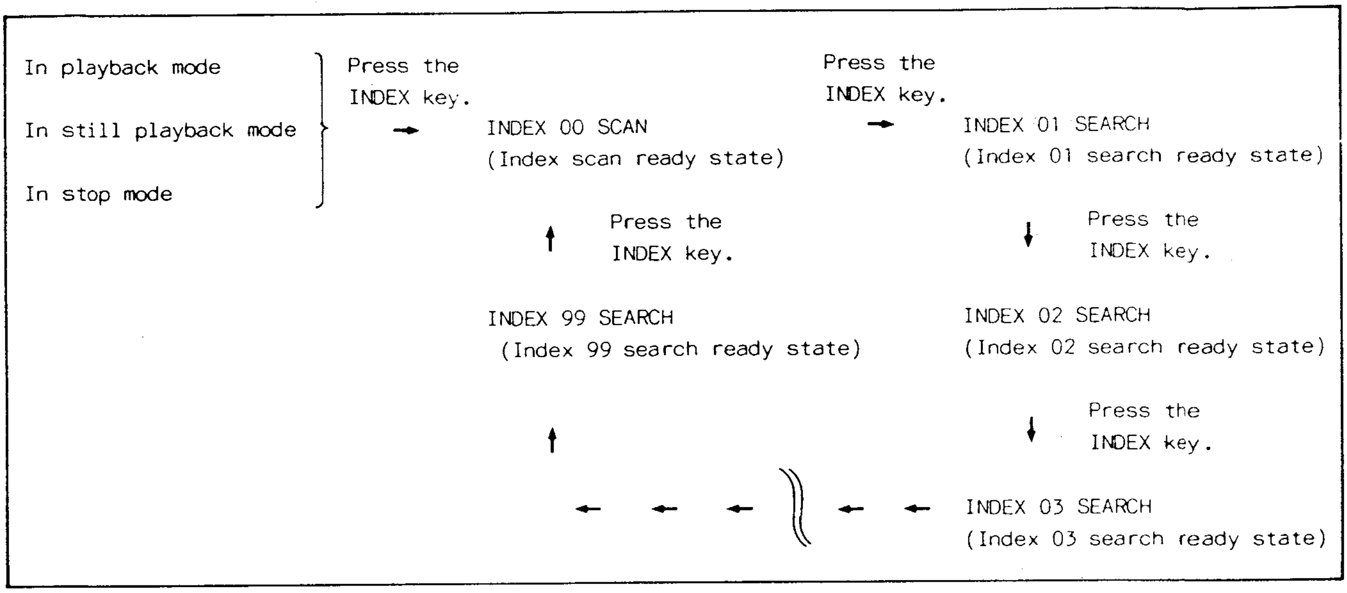

In playback mode
In still playback mode
In stop mode
Press the INDEX key.
INDEX 00 SCAN
(Index scan ready state)
Press the INDEX key.
INDEX 01 SEARCH
(Index 01 search ready state)
Press the INDEX key.
Press the INDEX key.
INDEX 99 SEARCH
(Index 99 search ready state)
INDEX 02 SEARCH
(Index 02 search ready state)
Press the INDEX key.
INDEX 03 SEARCH
(Index 03 search ready state)

Fig. I-5

2) In the index scan/search ready state, press the FF ▶▶ key or ◀◀ REW key. Thus, index scanning or searching can be started, and the fast-forward playback mode *2 or the rewind playback mode *2 is set up.

*2: Fast-forwarding or rewinding is performed when the FF or REW key is pressed in the stop mode.

In index scanning, when the index signal is detected, playback is performed for approx. 10 seconds. Then, fast-forward playback or rewind playback is carried out until the next index signal is detected. This sequence of detection and playback is repeated. Each time the index signal is detected, the index scan indication on viewfinder screen advances as INDEX 01 SCAN, INDEX 02 SCAN, and so on. After INDEX 99 SCAN, INDEX 00 SCAN appears again in a cyclic fashion.

If the PLAY ▶ key is pressed during a period of 10-second playback, index scanning is canceled and playback is resumed.

In index searching, each time the index signal is detected, the index search indication on viewfinder screen is decremented as INDEX 03 SEARCH, INDEX 02 SEARCH, and so on. When INDEX 00 SEARCH is reached, cuing is completed and playback is resumed.

° How to cancel index searching/scanning

Press the STOP key.

° How to delete index signals

When any scene having the index signal to be deleted is played back during index scanning/searching, press the INDEX ERASE key on the remote controller within at least 10 seconds.

- In index scanning, the current on-tape location is skipped to the next index signal point.
- In index searching, normal playback is resumed.

- * The index signal cannot be erased on a write-protected videotape cassette.

- * When the index signal is erased, the RC time code and data code are also removed from the relevant area. On playback of the erased part, the RC time code is indicated as -:--:--:-- (bars).

- * When using the 'RC time code compatible' editing unit, rewrite the RC time code onto the erased area.

- * The index signals written with the video deck having the index function can be detected on this camcorder, but they may not be erased in some cases. Also, the index signals written with this camcorder can be detected on the video deck, but they may not be erased in some cases.

- * If PCM after-recording is made on the index-signal-recorded area using other 8mm video camcorder or deck, the index signal may be deleted.

2-3 Date scan/search function

Whereas the index scan/search function uses the index signals, the date scan/search function uses date code data recorded on tape. Since the date code can be recorded automatically during shooting, it is not required to enter any special signal as in use of the index function. However, the date data is used in lieu of the index signal, scanning/searching cannot be made if recording on cassette has been completed on the same day.

° Date search

Select a date count corresponding to the desired date, and press the FF or REW key. Thus, searching is performed according to the selected date count, and then playback is started.

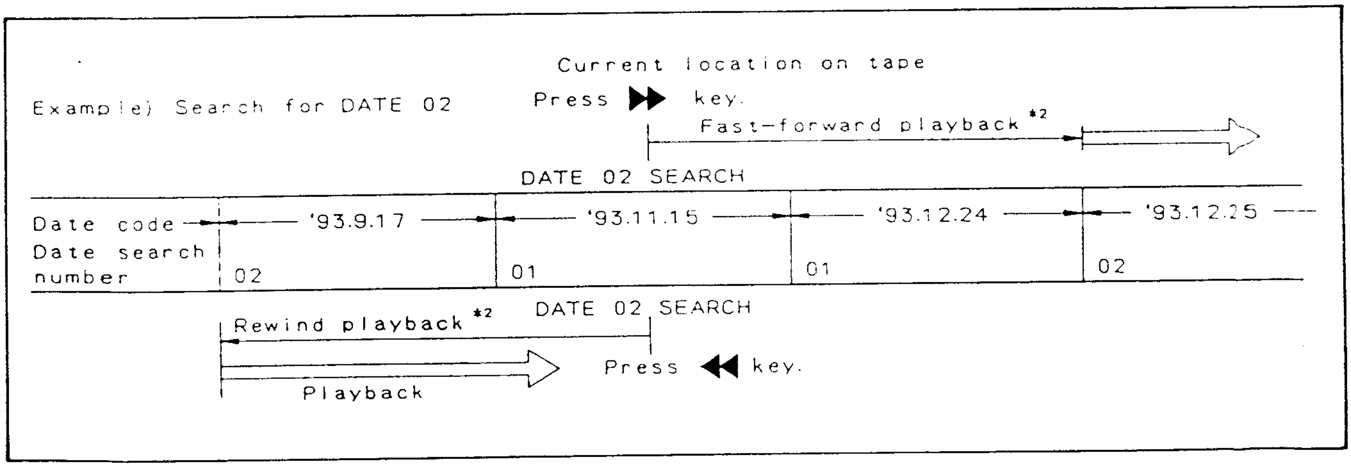


Fig. I-6

*1: In case that searching is attempted in the playback or still playback mode.
If searching is made in the stop mode, fast-forwarding is performed (except for the PAL version).

*2: In case that searching is attempted in the playback or still playback mode.
If searching is made in the stop mode, rewinding is performed (except for the PAL version).

* A date search number indicates a relative date position with respect to the current location (0) on tape. So, the date search number varies depending on the current location on tape.

° Date scan

Playback is carried out for approx. 10 seconds starting from each date point, and other pictures are skipped over.

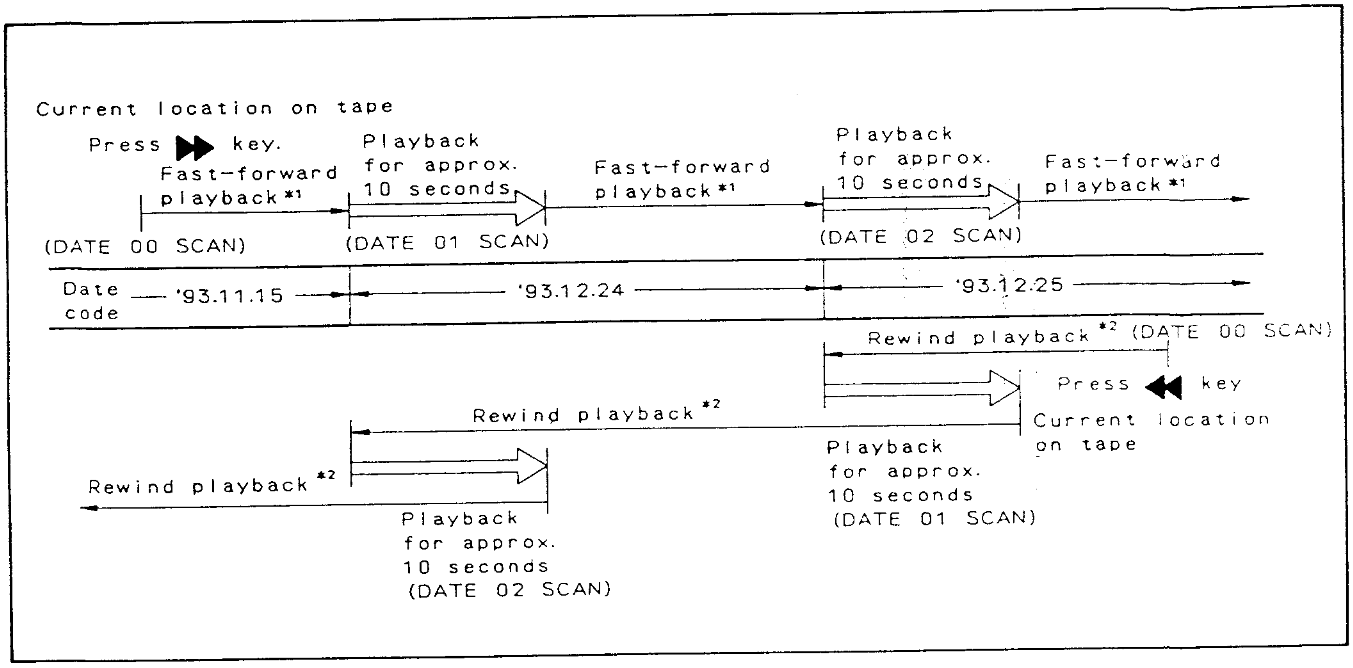

Current location on tape
Press ▶▶ key.
Fast-forward playback *1
(DATE 00 SCAN)
Playback for approx. 10 seconds
(DATE 01 SCAN)
Fast-forward playback *1
Playback for approx. 10 seconds
(DATE 02 SCAN)
Fast-forward playback *1
Date code
'93.11.15
'93.12.24
'93.12.25
Rewind playback *2 (DATE 00 SCAN)
Press ◀◀ key
Current location on tape
Rewind playback *2
Playback for approx. 10 seconds
(DATE 01 SCAN)
Rewind playback *2
Playback for approx. 10 seconds
(DATE 02 SCAN)

Fig. I-7

*1: In case that searching is attempted in the playback or still playback mode.
If searching is made in the stop mode, fast-forwarding is performed (except for the PAL version).

*2: In case that searching is attempted in the playback or still playback mode.
If searching is made in the stop mode, rewinding is performed (except for the PAL version).

2-3-1 Operating procedures

° How to carry out date searching/scanning

1) In the playback, still playback or stop mode (except the stop mode in the PAL version), press the DATE SEARCH key on the remote controller. Thus, the date scan/search ready state can be set up as shown below.

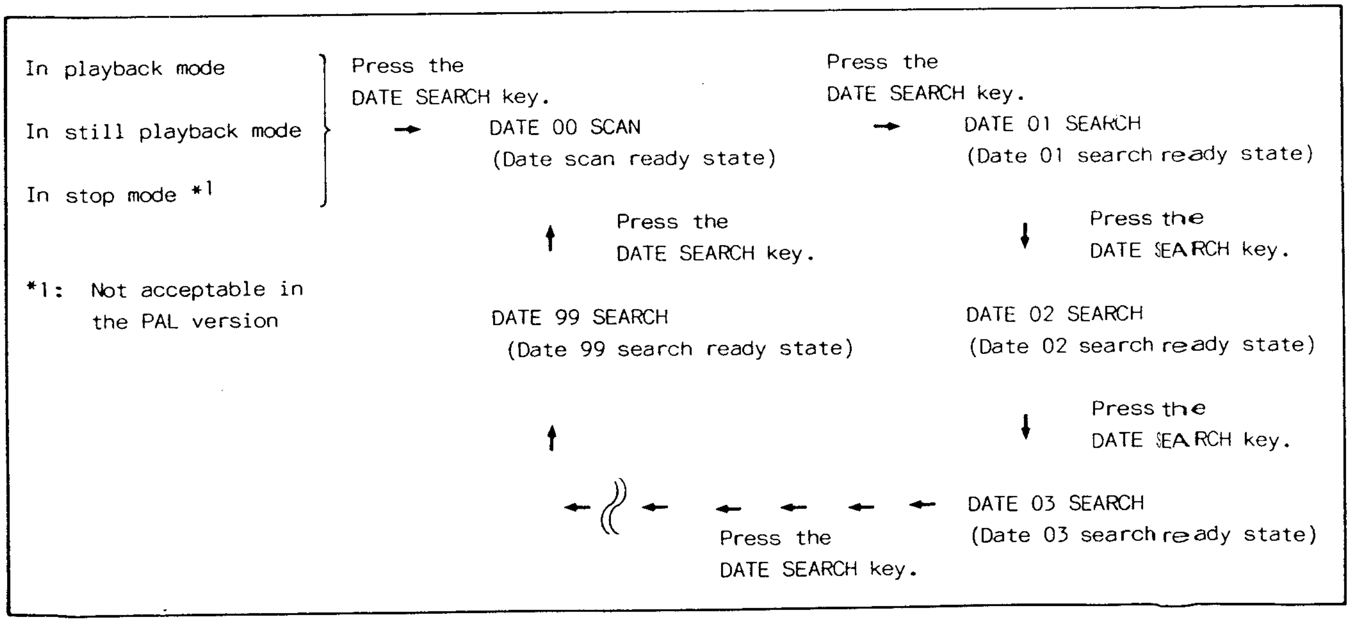

In playback mode
In still playback mode
In stop mode *1
*1: Not acceptable in the PAL version
Press the DATE SEARCH key.
DATE 00 SCAN
(Date scan ready state)
Press the DATE SEARCH key.
DATE 01 SEARCH
(Date 01 search ready state)
Press the DATE SEARCH key.
DATE 02 SEARCH
(Date 02 search ready state)
Press the DATE SEARCH key.
DATE 03 SEARCH
(Date 03 search ready state)
Press the DATE SEARCH key.
DATE 99 SEARCH
(Date 99 search ready state)
Press the DATE SEARCH key.

Fig. I-8

2) In the date scan/search ready state, press the FF ▶▶ key or ◀◀ REW key. Thus, date scanning or searching can be started, and the fast-forward playback mode *2 or the rewind playback mode *2 is set up.

*2: Fast-forwarding or rewinding is performed when the FF or REW key is pressed in the stop mode (except for the PAL version).

- In date scanning, when the date code is changed, playback is performed for approx. 10 seconds. Then, fast-forward playback *2 or rewind playback *2 is carried out until the next date code is detected. This sequence of detection and playback is repeated.

  *2: Fast-forwarding or rewinding is performed when the FF or REW key is pressed in the stop mode (except for the PAL version).

  Each time the date code is changed, the date scan indication on viewfinder screen advances as DATE 02 SCAN, DATE 03 SCAN, DATE 04 SCAN, and so on. After DATE 99 SCAN, DATE 00 SCAN appears again in a cyclic fashion (then DATE 01 SCAN, DATE 02 SCAN, and so on are indicated).

  If the play ▶ key is pressed ruing a period of 10-second playback, date scanning is canceled and playback is resumed.

- In date searching, each time the date code is changed, the date search indication on viewfinder screen is decremented as DATE 03 SEARCH, DATE 02 SEARCH, and so on. When DATE 00 SEARCH is reached, cuing is completed and playback is resumed.

° How to cancel date scanning/searching

Press the STOP key.

2-4 Digital special-effect functions

This camcorder is equipped with the following digital special-effect functions.

Included for recording are:
1) Close-up
2) Overlap
3) Freeze
4) Art freeze
5) Slow shutter
6) Wipe
   (In the PAL version, the cinema and split functions are also incorporated; eight special recording functions in total.)

Included for playback are:
7) Stroboscopic effects (7 kinds of effects)
8) Art effects (4 kinds of effects)
   (These playback special functions are incorporated in the NTSC version only.)

Note that the wipe, cinema and split effect functions are new features.

The operating procedures for these functions are the same as those for Model L1/EX1Hi. Sequential selection with the D.E. SELECT key is adopted.

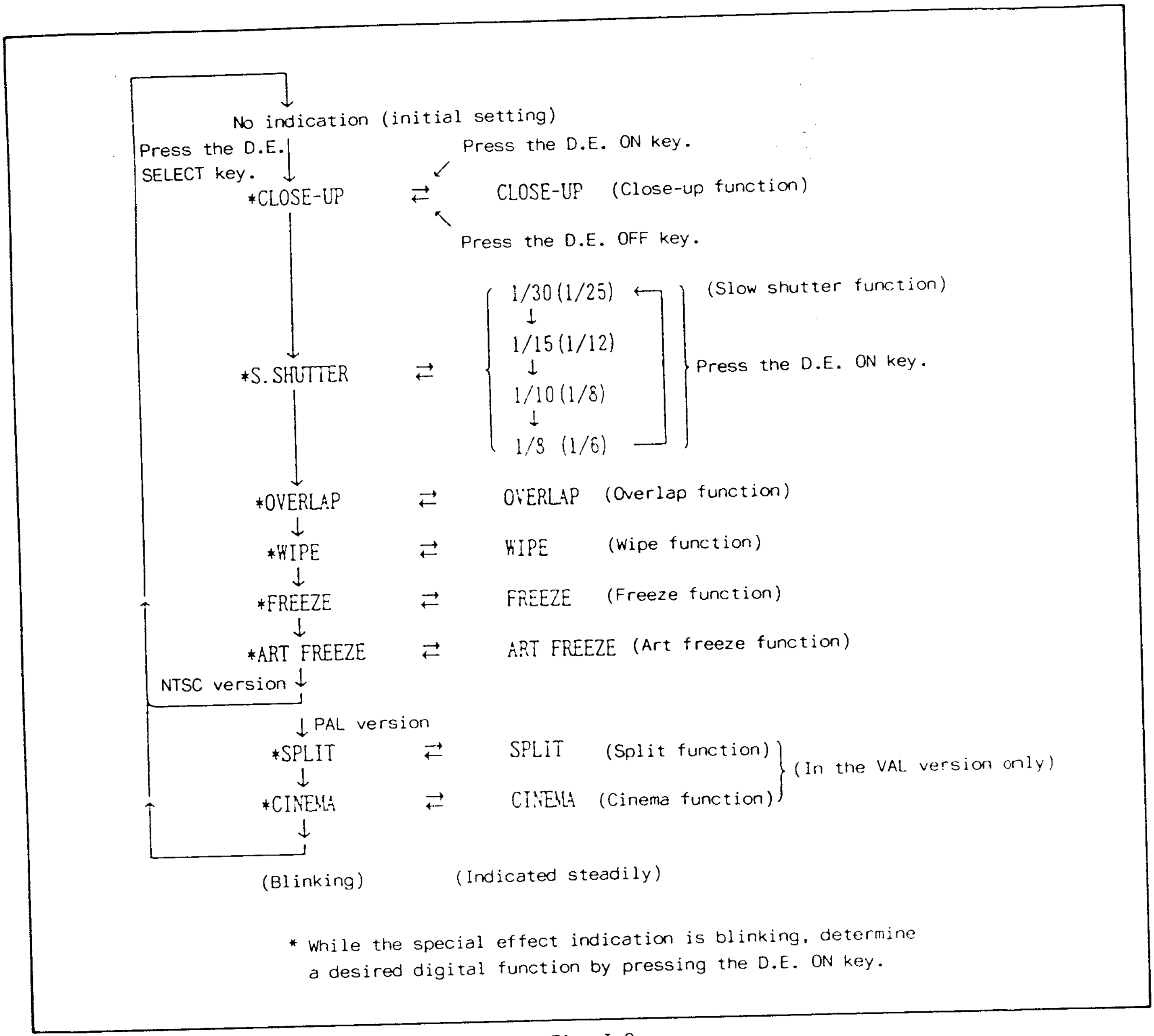

No indication (initial setting)
Press the D.E. SELECT key.
Press the D.E. ON key.
*CLOSE-UP ⇄ CLOSE-UP (Close-up function)
Press the D.E. OFF key.
1/30 (1/25)
1/15 (1/12)
1/10 (1/8)
1/8 (1/6)
(Slow shutter function)
*S.SHUTTER ⇄
Press the D.E. ON key.
*OVERLAP ⇄ OVERLAP (Overlap function)
*WIPE ⇄ WIPE (Wipe function)
*FREEZE ⇄ FREEZE (Freeze function)
*ART FREEZE ⇄ ART FREEZE (Art freeze function)
NTSC version
PAL version
*SPLIT ⇄ SPLIT (Split function)
*CINEMA ⇄ CINEMA (Cinema function)
(In the VAL version only)
(Blinking)
(Indicated steadily)
* While the special effect indication is blinking, determine a desired digital function by pressing the D.E. ON key.

Fig. I-9

In Model L1/EX1Hi, the digital special-effect circuit is activated by turning the camera mode select switch to 'M' (MANUAL) during recording. In this camcorder, the digital special-effect circuit cannot be activated just by turning the camera mode select switch to 'M' position. When the digital special-effect indication is presented on the viewfinder screen (steady or blinking indication), the digital special-effect circuit can be activated for reducing power consumption.

2-4-1 New digital special-effect features

(1) Wipe effect function

The wipe effect function allows changeover from the last recorded still picture (field memory output image) to the normal motion picture starting from the leftmost position. It can provide a kind of scene presentation different from that with the overlap function. This wipe function has the following modes (same as in the overlap function):

1) Field memory image check mode
2) Rehearsal (demonstration) mode in the stop state

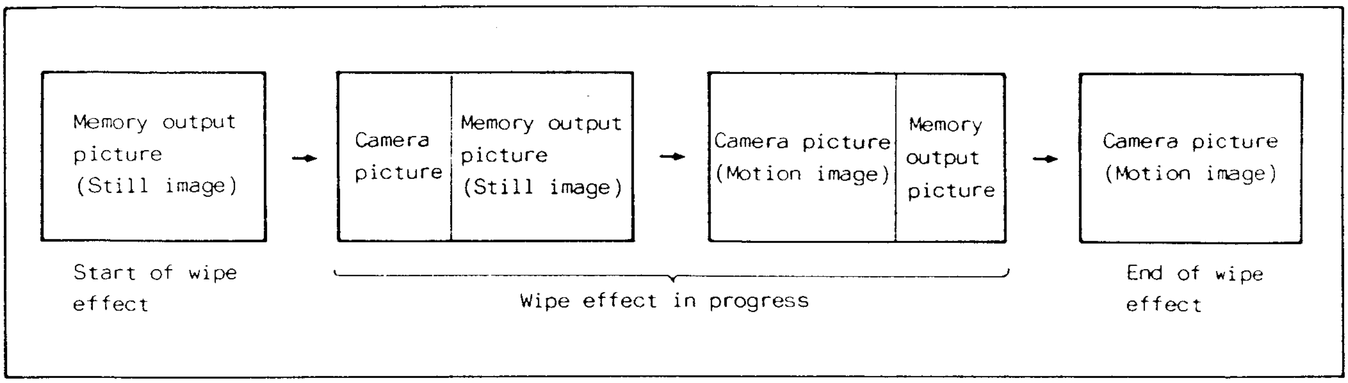

Memory output picture (Still image)
Camera picture
Memory output picture (Still image)
Camera picture (Motion image)
Memory output picture
Camera picture (Motion image)
Start of wipe effect
Wipe effect in progress
End of wipe effect

Fig. I-10

° Normal wipe effect operation

1) Press the D.E. SELECT key to blink the wipe mode indication. Then, press the D.E. ON key to choose the wipe effect function.

2) Set up the record pause mode by pressing the START/STOP button. Thus, the camera EE picture is read into the field memory.

3) Press the START/STOP button again to restart shooting. At this step, the wipe effect function turns on. Thus, the camera EE picture is changed to the memory picture (still image held in field memory). In wiping, rightward changeover to the EE picture is made starting from the left most position of screen.

Wiping can be performed until the wipe mode is canceled by pressing the D.E. OFF key.

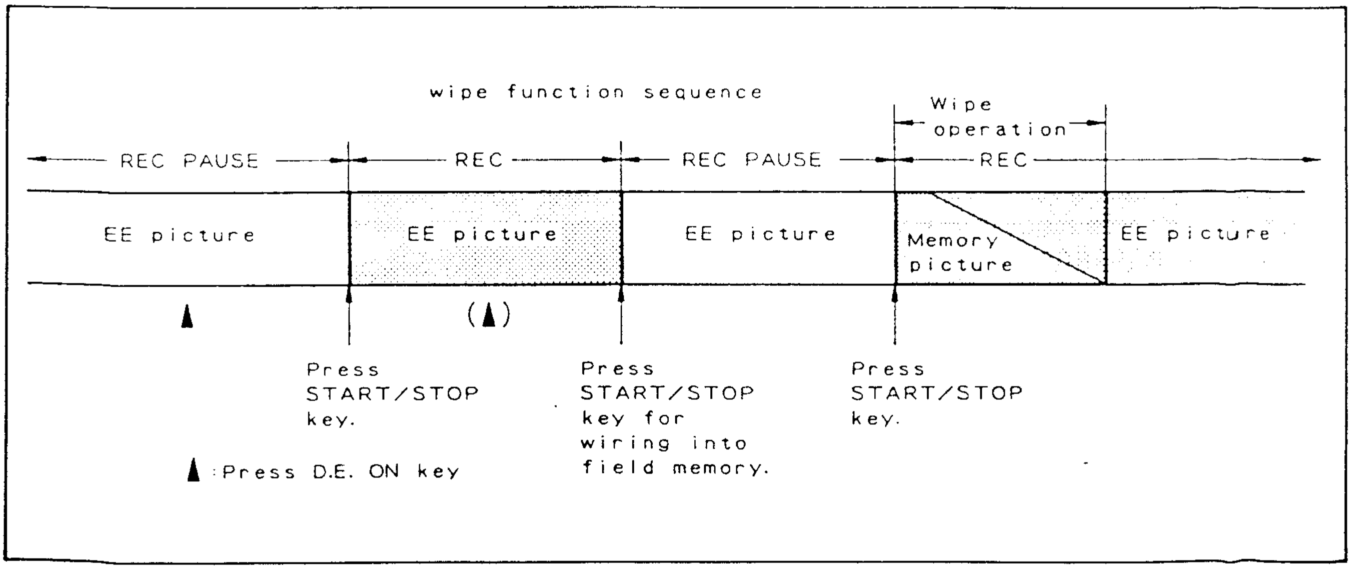

wipe function sequence
Wipe operation
REC PAUSE
REC
REC PAUSE
REC
EE picture
EE picture
EE picture
Memory picture
EE picture
(▲)
Press START/STOP key.
Press START/STOP key for wiring into field memory.
Press START/STOP key.
▲:Press D.E. ON key

Fig. I-11

° Field memory image check mode of wipe function

This mode allows the user to check an image stored in the field memory. By pressing the D.E. ON key in the REC PAUSE mode, the user can check a memory picture and wipe operation.

1) Press the D.E. ON key in the REC PAUSE mode. Thus, the memory image check mode is set up and a picture held in the field memory is output. While the D.E. ON key is held down, the memory picture is output continuously.

2) Release the D.E. ON key. Then, the wipe effect function turns on. In wiping, rightward changeover to the EE picture is made starting from the leftmost position of screen.

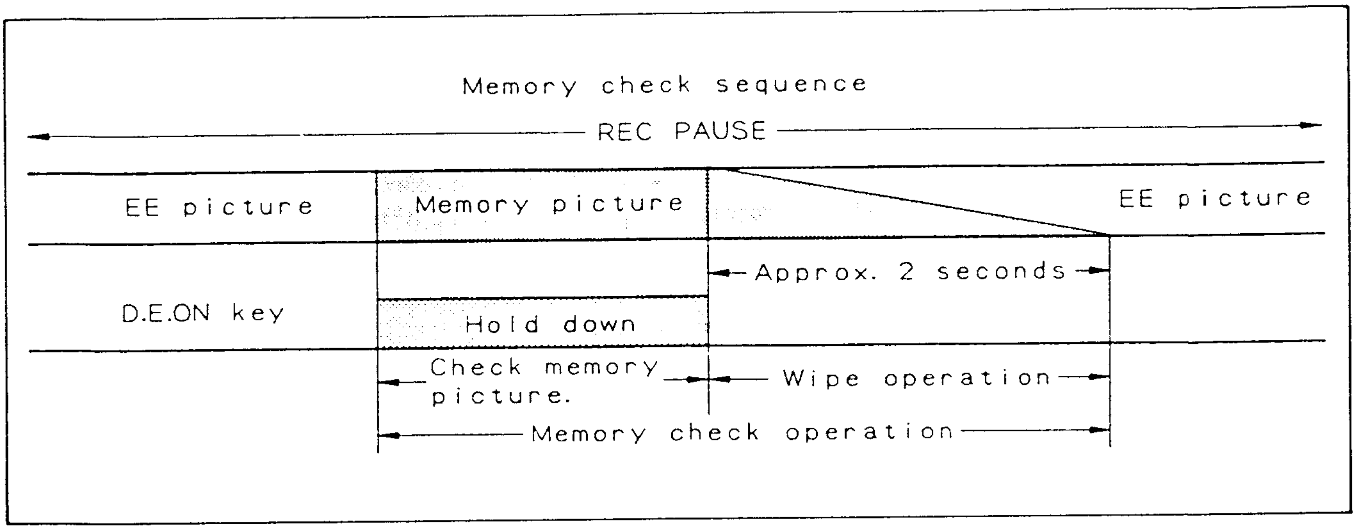

Memory check sequence
REC PAUSE
EE picture
Memory picture
EE picture
Approx. 2 seconds
D.E.ON key
Hold down
Check memory picture.
Wipe operation
Memory check operation

Fig. I-12

° Rehearsal mode of wipe function

This mode is provided for demonstration of the wipe function without actual recording.

For wipe effect rehearsal, the wipe mode must be chosen with the D.E. SELECT key in the stop mode ('WIPE' blinking).

1) Press the D.E. ON key to set up the rehearsal mode. The current EE picture is stored into the memory, and then the memory picture is output. While the D.E. ON key is held down, the memory picture is output continuously.

2) Release the D.E. ON key. Then, the wipe effect function turns on. In wiping, rightward changeover to the EE picture is made starting from the leftmost position of screen.

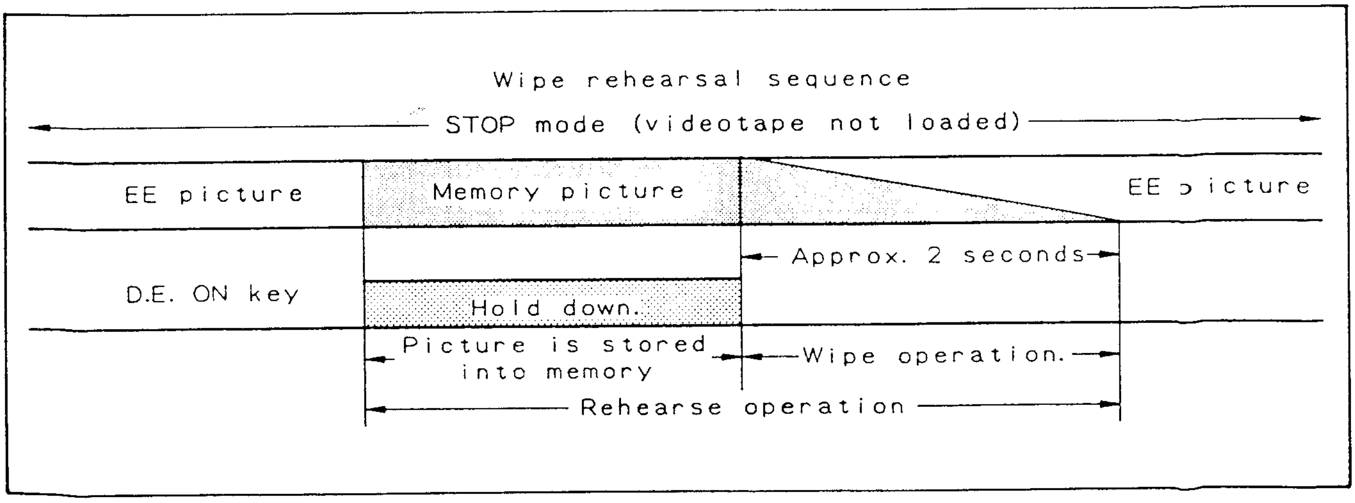

Wipe rehearsal sequence
STOP mode (videotape not loaded)
EE picture
Memory picture
EE picture
Approx. 2 seconds
D.E. ON key
Hold down.
Picture is stored into memory
Wipe operation.
Rehearse operation

Fig. I-13

3. Circuit Description

The circuit operations of the camera AF section in this camcorder are almost the same as those in Model EX1Hi. Please refer to the Service Manual for Model EX1Hi/A2Hi.

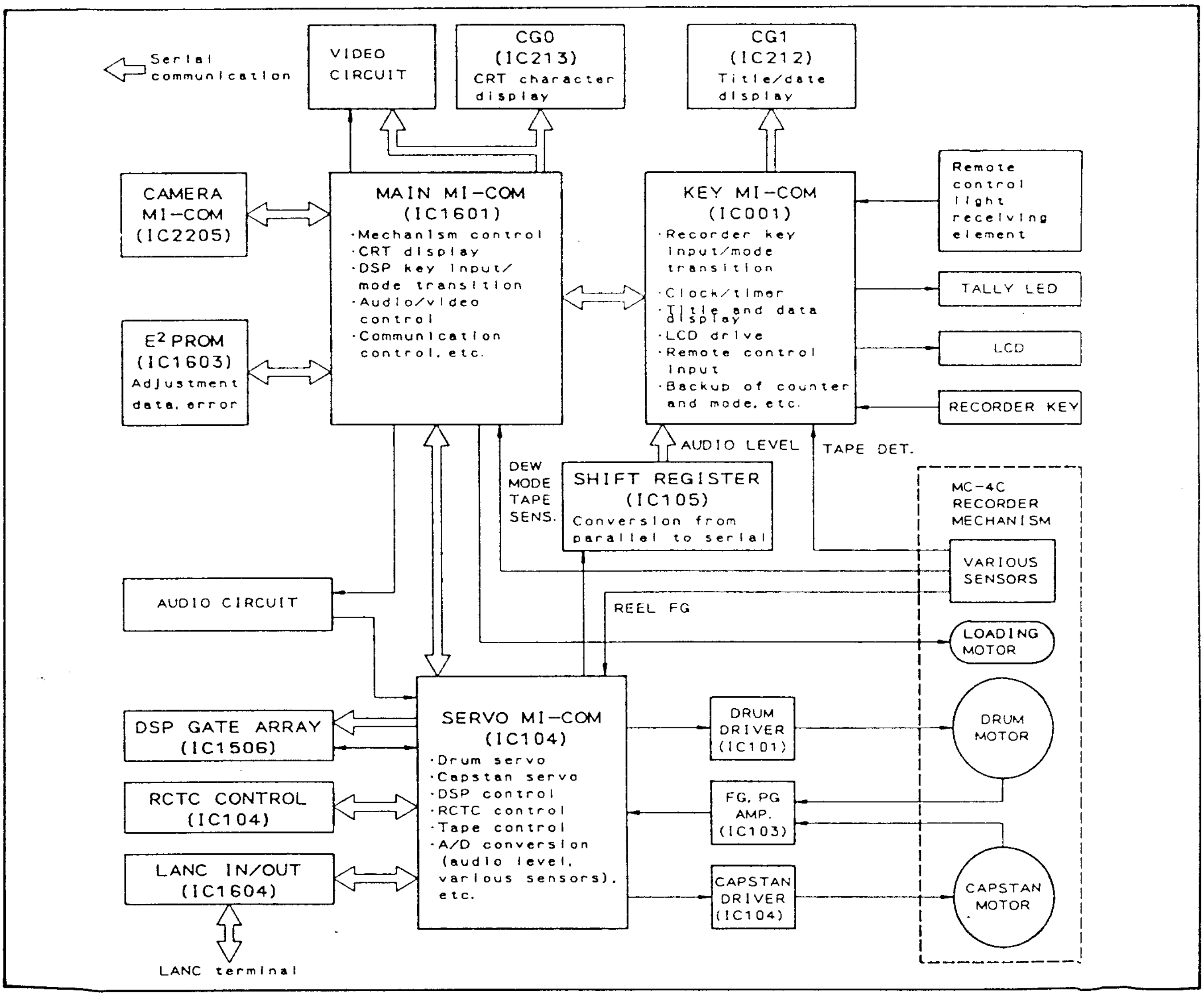
3-1 System control-servo circuit operation

3-1-1 System control circuit

System control operations are primarily carried out under control of MAIN microcomputer (IC1601), KEY microcomputer (IC001) and SERVO microcomputer (IC104). Input devices/input signals for system control include operation keys, mechanism switches, error detection signal, servo data, wireless remote controller and RCTC data. These signals are processed and judged by the three microcomputers for control of various operations. Among the microcomputers, information is exchanged via a serial communication, which is controlled by the MAIN microcomputer (IC1601).

Differences from EX1Hi are as listed below.

(1) Addition of E^{2}PROM (IC1603) for storing discharging and switching point adjustment data
(2) Control and communication between RCTC control (IC1506) and SERVO microcomputer (IC104) due to addition of RCTC function
(3) Direct LANC communication by SERVO microcomputer (IC104) through LANC IN/OUT IC



Serial communication
VIDEO CIRCUIT
CG0 (IC213) CRT character display
CG1 (IC212) Title/date display
CAMERA MI-COM (IC2205)
MAIN MI-COM (IC1601)
·Mechanism control
·CRT display
·DSP key input/mode transition
·Audio/video control
·Communication control, etc.
KEY MI-COM (IC001)
·Recorder key input/mode transition
·Clock/timer
·Title and data display
·LCD drive
·Remote control input
·Backup of counter and mode, etc.
Remote control light receiving element
TALLY LED
LCD
RECORDER KEY
E² PROM (IC1603) Adjustment data, error
AUDIO LEVEL
TAPE DET.
DEW MODE TAPE SENS.
SHIFT REGISTER (IC105) Conversion from parallel to serial
MC-4C RECORDER MECHANISM
VARIOUS SENSORS
AUDIO CIRCUIT
REEL FG
LOADING MOTOR
SERVO MI-COM (IC104)
·Drum servo
·Capstan servo
·DSP control
·RCTC control
·Tape control
·A/D conversion (audio level, various sensors), etc.
DSP GATE ARRAY (IC1506)
RCTC CONTROL (IC104)
LANC IN/OUT (IC1604)
LANC terminal
DRUM DRIVER (IC101)
DRUM MOTOR
FG, PG AMP. (IC103)
CAPSTAN DRIVER (IC104)
CAPSTAN MOTOR

Fig. I-14

3-1-2 Power supply circuit

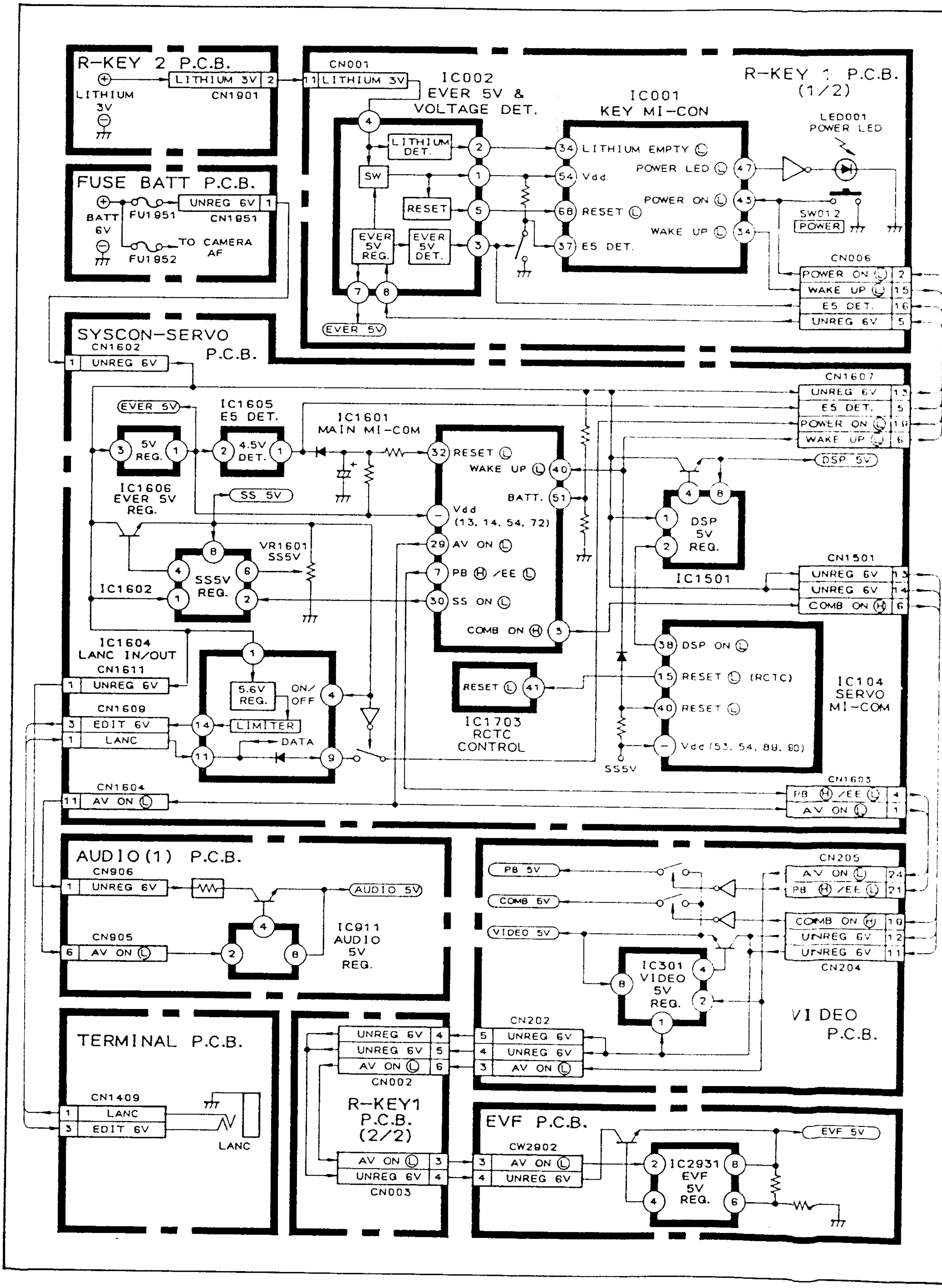

R-KEY 2 P.C.B.
LITHIUM 3V
LITHIUM 3V
CN1901
FUSE BATT P.C.B.
BATT 6V
FU1951
FU1952
UNREG 6V
CN1951
TO CAMERA AF
CN001
IC002 EVER 5V & VOLTAGE DET.
LITHIUM DET.
SW
RESET
EVER 5V REG.
EVER 5V DET.
EVER 5V
IC001 KEY MI-CON
LITHIUM EMPTY Ⓛ
Vdd
RESET Ⓛ
E5 DET.
POWER LED Ⓛ
POWER ON Ⓛ
WAKE UP Ⓛ
R-KEY 1 P.C.B. (1/2)
LED001 POWER LED
SW012 POWER
CN006
POWER ON Ⓛ
WAKE UP Ⓛ
E5 DET.
UNREG 6V
SYSCON-SERVO P.C.B.
CN1602
UNREG 6V
EVER 5V
IC1605 E5 DET.
4.5V DET.
5V REG.
IC1606 EVER 5V REG.
IC1601 MAIN MI-COM
RESET Ⓛ
WAKE UP Ⓛ
BATT.
Vdd (13. 14. 54. 72)
AV ON Ⓛ
PB Ⓗ /EE Ⓛ
SS ON Ⓛ
COMB ON Ⓗ
SS 5V
VR1601 SS5V
SS5V REG.
IC1602
CN1607
UNREG 6V
E5 DET.
POWER ON Ⓛ
WAKE UP Ⓛ
DSP 5V
DSP 5V REG.
IC1501
CN1501
UNREG 6V
UNREG 6V
COMB ON Ⓗ
IC1604 LANC IN/OUT
CN1611
UNREG 6V
CN1609
EDIT 6V
LANC
5.6V REG.
ON/OFF
LIMITER
DATA
RESET Ⓛ
IC1703 RCTC CONTROL
DSP ON Ⓛ
RESET Ⓛ (RCTC)
RESET Ⓛ
Vdd (53. 54. 88. 80)
IC104 SERVO MI-COM
SS5V
CN1604
AV ON Ⓛ
CN1603
PB Ⓗ /EE Ⓛ
AV ON Ⓛ
AUDIO (1) P.C.B.
CN906
UNREG 6V
AUDIO 5V
CN905
AV ON Ⓛ
IC911 AUDIO 5V REG.
PB 5V
COMB 5V
VIDEO 5V
CN205
AV ON Ⓛ
PB Ⓗ /EE Ⓛ
COMB ON Ⓗ
UNREG 6V
UNREG 6V
CN204
IC301 VIDEO 5V REG.
VIDEO P.C.B.
CN202
UNREG 6V
UNREG 6V
AV ON Ⓛ
TERMINAL P.C.B.
CN1409
LANC
EDIT 6V
LANC
UNREG 6V
UNREG 6V
AV ON Ⓛ
CN002
R-KEY1 P.C.B. (2/2)
AV ON Ⓛ
UNREG 6V
CN003
EVF P.C.B.
CW2902
AV ON Ⓛ
UNREG 6V
EVF 5V
IC2931 EVF 5V REG.

Fig. I-15

(1) Kinds of power sources

Recorder power supply is generated from UNREG 6V from the battery/AC adapter. Independently from UNREG 6V, LITHIUM 3V is supplied to the KEY microcomputer (IC001) for backing up the auto date and counter. Each power source is detailed below.

EVER 5V (SYSCON-SERVO P.C.B., R-KEY 1 P.C.B.)

° SYSCON-SERVO P.C.B.

When UNREG 6V is supplied (power is supplied to the battery terminal), EVER 5V is output from IC1606 on the SYSCON-SERVO P.C.B. This power output is always issued as long as the power unit is provided, and it is used mainly for power supply to the MAIN microcomputer (IC1601).

° R-KEY 1 P.C.B.

When UNREG 6V is supplied (power is supplied to the battery terminal), EVER 5V is output from IC002 on the R-KEY 1 P.C.B. This power output is always issued as long as the power unit is provided, and it is used mainly for power supply to the KEY microcomputer (IC001).

SS 5V (SYSCON-SERVO P.C.B.)

When turning ON the power switch, SS ON Ⓛ is output from the MAIN microcomputer (IC1601-30 pin). In response to this signal, IC1602 turns ON, and the comparison voltage determined by VR1601 is compared with the internal reference voltage. According to the result of this comparison, the output driver is controlled so that a constant voltage of 5 V is obtainable.

This power line serves the system control-servo circuit.

DSP 5V (SYSCON-SERVO P.C.B.)

When DSP is operable (in camera mode, PB, etc.), DSP ON Ⓛ is output from the SERVO microcomputer (IC104-38 pin). In response to this signal, IC1501 turns ON, the output driver is controlled so that a constant voltage of 5 V is obtainable.

This power line serves the DSP circuit.

VIDEO 5V (VIDEO P.C.B.)

According to AV ON Ⓛ output from the MAIN microcomputer (IC1601-29 pin), IC301 turns ON and the output driver outputs a constant voltage of 5 V as in SS 5V.

This power line serves the video circuit.

PB 5V (VIDEO P.C.B.)

According to PB Ⓗ/EE Ⓛ output from the MAIN microcomputer (IC1601-22 pin) in PB, the transistor turns ON and VIDEO 5V is output as PB 5V.

This power line serves the video circuit section exclusively used for playback.

COMB 5V (VIDEO P.C.B.)

Composite signal. According to COMB ON Ⓛ output from the MAIN microcomputer (IC1601-3 pin) in LINE IN and PB, the transistor turns ON and VIDEO 5V is output as COMB 5V.

This power line serves the Y/C separating section of video circuit.

AUDIO 5V (AUDIO (1) P.C.B.)

5 V power supply to the AUDIO line is generated on the AUDIO (1) P.C.B. As a trigger signal, AV ON Ⓛ is used the same as for VIDEO 5V.

EVF 5V (EVF P.C.B.)

5 V power supply to the EVF line is generated on the EVF P.C.B. As a trigger signal, AV ON Ⓛ is used the same as for VIDEO 5V.

EDIT 6V (SYSCON-SERVO P.C.B.)

This 6 V power is supplied from the jack of terminal board to the editing machine side. (Voltage value is about 5.6 V to be exact.)

With SS 5V used as a trigger signal, IC1604 outputs EDIT 6V.

LITHIUM 3V (R-KEY 2 P.C.B.)

LITHIUM 3V supplied from the lithium battery is used as a backup power supply for the auto date and counter under control of the KEY microcomputer (IC001) when the power unit is disconnected. When the power unit is mounted, EVER 5V is supplied to the KEY microcomputer (IC001) via IC002 8-3 pins.

(2) Turning on power supply

MAIN microcomputer resetting on connection of power supply

When connecting the power unit to the battery terminal, EVER 5V is supplied as a power source from IC1606-1 pin to the VDD terminal of MAIN microcomputer (IC1601). At this time, the E5 DET. signal of IC1605-1 pin rises with a time lag of about 300 (ms) from EVER 5V. During this time period, the RESET terminal of MAIN microcomputer pin 7 remains in the 'Low' status so that initial resetting is made. After completion of initialization, MAIN microcomputer enters STAND-BY mode, and stand-by status is set. When the battery starts discharging and the charge on UNREG 6V line drops to 4.5 V or less, the E5 DET. signal turns to 'Low'. As a result, MAIN microcomputer is reset and shut-off status is set.

KEY microcomputer resetting on connection of power supply

The KEY microcomputer (IC001) is reset in two cases below.

1) After connecting the lithium battery with the main battery disconnected, the main battery has been connected.

2) The main battery has been connected with the lithium battery disconnected.

In these cases, the IC002-5 pin turns to 'Low' on connection of the main battery and the KEY microcomputer is reset.

Note that IC002 issues no output from pin 1 even when connecting the lithium battery with the main battery disconnected. Once the main battery is connected, power supply is output from pin 1.

The KEY microcomputer selects either status below depending on whether or not the main battery is connected.

1) In case the main battery is not connected (provided the lithium battery is connected):

The E5 DET. signal of IC002-3 pin turns to 'Low' and the transistor turns OFF. Because LITHIUM 3V is supplied to pin 37 of KEY microcomputer, this pin turns to 'High'. As a result, KEY microcomputer judges that the main battery is not connected. In this status, the KEY microcomputer performs backups of auto date, title, counter memory, etc.

2) In case the main battery is connected:

The E5 DET. signal of IC002-3 pin turns to 'High' and the transistor turns ON. As a result, KEY microcomputer judges that the main battery is not connected, and the stand-by status is set.

Operation at power switch ON

After completion of the above-mentioned resettings, KEY microcomputer and main microcomputer are set in the STAND-BY mode. When 'Low' pulse is input to pin 43 of KEY microcomputer by pressing the power switch in the present status, KEY microcomputer starts and outputs WAKE UP Ⓛ from pin 34. MAIN microcomputer starts when the WAKE UP Ⓛ signal is input to pin 40, and outputs SS ON Ⓛ and AV ON Ⓛ to turn on each power supply. When SS 5V turns ON, it is supplied as a power source to the VDD terminal of SERVO microcomputer (IC101). At this time, the WAKE UP Ⓛ signal still maintains the 'Low' status and pin 40, or RESET terminal of SERVO microcomputer is also in the 'Low' status. Therefore, SERVO microcomputer is reset and operation starts.

After the above operations, the WAKE UP Ⓛ signal turns to 'High' and POWER LED Ⓛ signal is issued from pin 47 of KEY microcomputer to light the power LED.

Operation at power switch OFF

When 'Low' pulse is input to pin 43 of KEY microcomputer by pressing the power switch with power supply turned ON, POWER LED Ⓛ signal of pin 47 turns to 'High' to put out the power LED.
At the same time, POWER OFF is reported to MAIN microcomputer via serial data communication.
MAIN microcomputer sets the mechanism in the STOP mode, and then turns off power supply.

3-1-3 Pin functions of KEY microcomputer (IC001)

Table I-4 (1/3)

<table>
<tr><th>Pin No.</th><th>Signal designation</th><th>I/O</th><th>Function</th></tr>
<tr><td>1
≀
12</td><td>S12
≀
S23</td><td>O</td><td>LCD segment output.</td></tr>
<tr><td>13
≀
16</td><td>KEY OUT 0
≀
KEY OUT 3</td><td>O</td><td>Key scan output.</td></tr>
<tr><td>17</td><td>CG1-CS</td><td>O</td><td>Chip select signal for serial data communication with CG1 (IC212). Serial data communication is carried out while this signal is 'High'.</td></tr>
<tr><td>18</td><td>CG1-STROBE</td><td>O</td><td>Data read-in instruction signal to CG1 (IC212).
On completion of data transfer, this signal goes 'High' to indicate the validity of data.</td></tr>
<tr><td>19</td><td>SHIFT Ⓛ/LOAD Ⓗ</td><td>O</td><td>Paralle-to-serial conversion control signal for audio data.
° When this signal becomes 'High', the 8-bit data input to IC105 is stored into each register a synchronously with clocking.
° When this signal becomes 'Low', each flip-flop circuit performs sequential shift on the leading edge of clock pulse.</td></tr>
<tr><td>20</td><td>SHIFT-CLOCK</td><td>O</td><td>Shift clock signal used in the parallel-to-serial conversion IC (IC105) for audio data.</td></tr>
<tr><td>21
≀
24</td><td>COM0
≀
COM3</td><td>O</td><td>LCD common lines.</td></tr>
<tr><td>25</td><td>-</td><td>-</td><td>Connected with pin 26 (unused).</td></tr>
<tr><td>26</td><td>-</td><td>-</td><td>Connected with pin 25 (unused).</td></tr>
<tr><td>27</td><td>NC</td><td>-</td><td>Open.</td></tr>
<tr><td>28</td><td>NC</td><td>-</td><td>Open.</td></tr>
<tr><td>29</td><td>ME Ⓗ/MP Ⓛ</td><td>I</td><td>ME/MP tape check input.
Through detection of the ID hole on cassette, it is checked whether the ME or MP tape is used.
This signal becomes 'High' when the ME tape is used, and it becomes 'Low' when the MP tape is used.</td></tr>
<tr><td>30</td><td>SAFETY TAB Ⓗ</td><td>I</td><td>Used for preventing unintentional erasure.
This signal becomes 'High' when the safety tab of cassette is set to the write-inhibit position.</td></tr>
<tr><td>31</td><td>SEL A</td><td rowspan="2">I</td><td rowspan="2">Television system identification input.
<table>
<tr><th>Signal \ Television system</th><th>USA</th><th>PAL</th></tr>
<tr><td>SEL A</td><td>H</td><td>L</td></tr>
<tr><td>SEL B</td><td>H</td><td>H</td></tr>
</table></td></tr>
<tr><td>32</td><td>SEL B</td></tr>
<tr><td>33</td><td>Vss</td><td>-</td><td>Connected with ground.</td></tr>
<tr><td>34</td><td>LITHIUM EMPTY Ⓛ</td><td>I</td><td>This signal goes 'Low' when the terminal voltage of lithium battery decreases below approx. 2.7 V.</td></tr>
<tr><td>35</td><td>HiMP Ⓗ</td><td>I</td><td>HiMP tape identification input.
This signal goes 'High' when the HiMP tape is used (recognized through detection of the ID hole on cassette).</td></tr>
<tr><td>36</td><td>-</td><td>I</td><td>No use.</td></tr>
<tr><td>37</td><td>E5 DET.</td><td>I</td><td>Used for detection of EVER 5V.
This signal checks whether the main battery back is loaded or not, and selects the microcomputer mode accordingly.
When the EVER 5V power is present (the main battery pack is loaded), this signal goes 'Low'.</td></tr>
</table>

Table I-4 (2/3)

Pin No.	Signal designation	I/O	Function
38	KEY-CS	I	Chip select signal for serial data communication with the MAIN microcomputer (IC1601). Serial data communication is carried out while this signal is 'High'.
39	S-CLOCK	0	Clock output for serial data communication with the MAIN microcomputer (IC1601) and CG1 (IC212).
40	S-DATA OUT	0	Data output for serial data communication with the MAIN microcomputer (IC1601) and CG1 (IC212).
41	S-DATA IN	I	Data input for serial data communication with the MAIN microcomputer (IC1601).
42	REMOCON DATA	I	This signal indicates input of the data received from the remote controller.
43	POWER ON Ⓛ	I	POWER switch input. When the POWER switch is pressed, this signal goes 'Low'.
44	AUDIO DATA	I	Audio-level serial data input for indication on the audio-level meter.
45	MIC LEV. A/M SW Ⓛ	I	MIC LEV AUTO/MANUAL switch input. When the MIC LEV AUTO/MANUAL switch is pressed, this signal goes 'Low'.
46	TALLY	0	The tally LED indicator turns on when this signal goes 'Low'. In the recording/timer mode, the tally LED indicator blinks at each predetermined cycle. It lights up steadily when the remote control signal is received.
47	POWER LED Ⓛ	0	The POWER LED indicator turns on when this signal goes 'Low'. The POWER LED indicator lights up steadily at power-on, and it blinks on issuance of alarming (low level of battery voltage, moisture condensation, occurrence of fault).
48	WAKE UP Ⓛ	0	Used to start up the MAIN microcomputer (IC1601) and reset the SERVO microcomputer (IC104).
49	C-OUT	0	Timer clock frequency-divided output.
50	KEY IN 0	I	Key matrix input.
51	KEY IN 1		
52	EJECT SW Ⓛ	I	EJECT switch input. When the EJECT switch is pressed, this signal goes 'Low'.
53	STOP SW Ⓛ	I	STOP switch input. When the STOP switch is pressed, this signal goes 'Low'.
54	VDD	I	EVER 5V or LITHIUM 3V power input.
55	XT1	I	Sub-clock oscillation for timer.
56	XT2	0	Connected with the 32.76 KHz crystal oscillator.
57	NC	-	Open.
58	X1	I	Main clock oscillation.
59	X2	0	Connected with the 4.19 MHz crystal oscillator.
60	TITLE/DATE SW Ⓛ	I	TITLE/DATE switch input. When the TITLE/DATE switch is pressed, this signal goes 'Low'.
61	SHIFT SW Ⓛ	I	SHIFT switch input. When the SHIFT switch is pressed, this signal goes 'Low'.
62	+ SW Ⓛ	I	'+' switch input. When the '+' switch is pressed, this signal goes 'Low'.
63	- SW Ⓛ	I	'-' switch input. When the '-' switch is pressed, this signal goes 'Low'.
64	COUNTER/TC SW Ⓛ	I	COUNTER/TC switch input. When the COUNTER/TC switch is pressed, this signal goes 'Low'.
65	SP/LP SW Ⓛ	I	SP/LP switch input. (PAL) When the SP/LP switch is pressed, this signal goes 'Low'.

Table I-4 (3/3)

Pin No.	Signal designation	I/O	Function
66	LINE IN/OUT SW Ⓛ	I	LINE IN/OUT switch input. When the LINE IN/OUT switch is pressed, this signal goes 'Low'.
67	TRIG. SW Ⓛ	I	TRIGGER switch input. When the TRIGGER switch is pressed, this signal goes 'Low'.
68	RESET Ⓛ	I	Microcomputer reset input. The microcomputer is reset when this signal goes 'Low'.
69 ~ 80	S0 ~ S11	O	LCD segment output.

3-1-4 Pin functions of MAIN microcomputer (IC601)

Table I-5 (1/3)

Pin No.	Signal designation	I/O	Function
1	LINE Ⓗ/CAMERA Ⓛ	O	Switches camera/line of video circuit.
2	CAMERA Ⓗ/LINE Ⓛ	O	Switches camera/line of video circuit.
3	COMB FILTER ON Ⓗ	O	Turns ON/OFF power supply of Y/C separation circuit.
4	COMP. IN Ⓛ	O	Controls video circuit. Goes 'Low' when composite video signal is input from video pin jack.
5	SP Ⓗ/LP Ⓛ	O	Unused.
6	Hi8 Ⓗ/NORMAL Ⓛ	O	Switches high band/normal of video circuit.
7	PB Ⓗ/EE Ⓛ	O	Switches PB/EE of video/audio circuit.
8	JOG Ⓗ	O	Switches normal/special playback (JOG) of video circuit.
9	V-MUTE Ⓗ	O	Video mute signal. 'High' for muting.
10	A-MUTE Ⓗ	O	Audio mute signal. 'High' for muting.
11	Hi8 DET Ⓗ	I	Inputs playback tape detection. 'High' for playback of high band-recorded tape.
12	ACK	I	ACK detection signal input terminal. Goes 'High' while playback chroma signal is absent.
13	VDD	I	Connected to EVER 5V.
14	VDD	I	Connected to EVER 5V.
15	CASSETTE DOWN Ⓛ	I	Cassette compartment down switch input. Goes 'Low' for down action of cassette compartment.
16 ~ 18	MODE 3 ~ MODE 1	I	Mode selector signal input. 3-bit composition. For detection of mechanism position.
19	DATA OUT	O	Outputs data for serial data communication with E^2PROM (IC1603).
20	CLOCK	O	Outputs clock for serial data communication with E^2PROM (IC1603).
21	VIDEO CS	O	Chip select for serial data communication to VIDEO IC (IC201). Communication is performed during 'Low' period.
22	E^2PROM-CS	O	Chip select for serial data communication to E^2PROM (IC1603).
23	DATA IN	I	Inputs data for serial data communication with E^2RPOM (IC1603).
24	CGO-STOROBE	O	Outputs 'High' at end of transmitting data read-in instruction signal data to CGO (IC213).
25	NC	-	Open.
26			
27	TAPE SENS. LED	O	Pulse for driving LED used to detect leading and trailing ends of tape.
28	CAMERA ON Ⓛ	O	Controls DC/DC converter of camera section. 'Low' for turning on power supply of camera section.
29	AV ON Ⓛ	O	Controls power supply of audio and video systems. 'Low' for turning on power supply of A/V systems.
30	SS ON Ⓛ	O	Controls power supply of SYSCON-SERVO block. 'Low' for turning on power supply of SS block.
31	-	I	Connected to GND.
32	RESET Ⓛ	I	Microcomputer reset input. Resets microcomputer at 'Low' input.
33	Vss	-	Connected to GND.
34	XTAL	-	Crystal connection terminal.
35	EXTAL	I	Connects 8 MHz X'TAL.
36	-	I	Connects EVER 5V.
37	S-DATA IN	I	Inputs data for serial data communication with KEY microcomputer (IC001), SERVO microcomputer (IC104) and CAMERA microcomputer (IC2205).

Table I-5 (2/3)

Pin No.	Signal designation	I/O	Function
38	S-DATA OUT	0	Outputs data for serial data communication with KEY microcomputer (IC001), SERVO microcomputer (IC104) and CAMERA microcomputer (IC2205).
39	S-CLOCK	I	Inputs clock for serial data communication with KEY microcomputer (IC001), SERVO microcomputer (IC104) and CAMERA microcomputer (IC2205).
40	WAKE UP Ⓛ	I	Microcomputer drive signal input. Starts microcomputer on input of 'Low' pulse.
41	-	I	Connected to EVER 5V.
42	CGO/VIDEO-DATA	0	Outputs data for serial data communication to CGO (IC213) and VIDEO IC (IC201).
43	CGO/VIDEO-CLOCK	0	Outputs clock for serial data communication to CGO (IC213) and VIDEO IC (IC201).
44	SV SYNC	I	Inputs vertical sync signal for servo. Reference signal for V synchronization with SERVO microcomputer (IC104).
45	REEL FG	I	Inputs winding-side (S or T) reel FG.
46	EOT SENS. Ⓛ	I	Inputs tape leading end detection sensor. 'Low' in synchronization with LED lighting at detection of the end of videotape.
47	BOT SENS. Ⓛ	I	Inputs tape trailing end detection sensor. 'Low' in synchronization with LED lighting at detection of the beginning of videotape.
48	-	I	Connected to GND.
49	-		
50	DEW SENSOR	I	Dew sensor input terminal. When dew point is reached, the resistance of dew sensor increases, so input voltage rises. Analog voltage input.
51	BATT.	I	Discharge voltage detection terminal.
52	AVss	-	Connected to GND.
53	AVref	-	Connected to EVER 5V.
54	AVdd		
55	TITLE SW Ⓛ	I	Inputs title switch. Goes 'Low' when pressing the switch.
56	DATE SW Ⓛ	I	Date switch input. Goes 'Low' when pressing the switch.
57	D.E. OFF SW Ⓛ	I	Digital effect OFF switch input. Goes 'Low' when pressing the switch.
58	D.E. ON SW Ⓛ	I	Digital effect ON switch input. Goes 'Low' when pressing the switch.
59	D.E. SELECT SW Ⓛ	I	Digital effect selector switch input. Goes 'Low' when pressing the switch.
60	INDEX MARK SW Ⓛ	I	Goes 'Low' when pressing the switch.
61	S CONNECTED Ⓛ	I	S cable connection judgment input. At 'Low' when S cable is connected to S terminal.
62	EDIT SW ON Ⓛ	I	Edit switch input. 'Low' when the switch is at ON.
63 ~ 65	NC	0	Open.
66	CAMERA-CS	0	Chip select for serial data communication with CAMERA microcomputer (IC2205). Communication is performed during 'High' period.

Table I-5 (3/3)

<table>
<tr><th>Pin No.</th><th>Signal designation</th><th>I/O</th><th>Function</th></tr>
<tr><td>67</td><td>SERVO-CS</td><td>0</td><td>Chip select for serial data communication with SERVO microcomputer (IC104).
Communication is performed during 'Low' period.</td></tr>
<tr><td>68</td><td>KEY-CS</td><td>0</td><td>Chip select for serial data communication with KEY microcomputer (IC001).
Communication is performed during 'High' period.</td></tr>
<tr><td>69</td><td>TEST 1</td><td rowspan="2">I</td><td rowspan="2">Terminals for function check at factory.</td></tr>
<tr><td>70</td><td>TEST 2</td></tr>
<tr><td>71</td><td>-</td><td>-</td><td>Connected to EVER 5V.</td></tr>
<tr><td>72</td><td>Vdd</td><td>I</td><td>Connected to EVER 5V.</td></tr>
<tr><td>73</td><td>Vss</td><td>-</td><td>Connected to GND.</td></tr>
<tr><td>74</td><td>NC</td><td>-</td><td>Open.</td></tr>
<tr><td>75</td><td>UNLOAD Ⓗ</td><td rowspan="2">0</td><td rowspan="2">Controls loading motor.
<table>
<tr><th></th><th>LOAD</th><th>UNLOAD</th><th>BRAKE</th></tr>
<tr><td>UNLOAD H</td><td>L</td><td>H</td><td>H</td></tr>
<tr><td>LOAD H</td><td>H</td><td>L</td><td>H</td></tr>
</table></td></tr>
<tr><td>76</td><td>LOAD Ⓗ</td></tr>
<tr><td>77</td><td>DRUM FORWARD Ⓛ</td><td>0</td><td>Switches forward/reverse rotation of drum motor.
'Low' for forward rotation.</td></tr>
<tr><td>78</td><td>STEREO Ⓗ/MONO Ⓛ</td><td>0</td><td>Controls audio circuit.
'Low' for line REC mono.</td></tr>
<tr><td>79</td><td>REC LEV. AUTO Ⓗ</td><td>0</td><td>Controls audio circuit.
Goes 'High' when input level is auto and 'Low' when manual.</td></tr>
<tr><td>80</td><td>DISPLAY Ⓛ</td><td>0</td><td>'Low' for displaying CGO-A (EVF display) on monitor.</td></tr>
</table>

3-1-5 Pin functions of SERVO microcomputer (IC104)

Table I-6 (1/3)

Pin No.	Signal designation	I/O	Function
1	CAPSTAN FWD Ⓗ	0	Controls rotational direction of capstan. 'High' for forward rotation and 'Low' for reverse rotation.
2	CAPSTAN TORQUE Ⓗ	0	Controls capstan torque UP. 'High' for torque UP.
3	NC	0	Open.
4	JOG VD	0	Pseudo VD output at special playback.
5	DSP SELECT Ⓗ	0	Selects DSP signal for video circuit. 'Low' for DSP.
6	CAMERA Ⓛ	0	Selects camera signal for video circuit. 'Low' for camera and 'High' for LINE IN, PB.
7	NC	0	Open.
8	DRUM BRAKE Ⓗ	0	Controls drum brake. 'High' for brake.
9	NC	0	Open.
10	DRUM ON Ⓗ	0	Controls drum ON/OFF. 'High' for drum ON.
11	SV SYNC	0	Vertical sync signal output for servo. Reference signal for V synchronization with MAIN microcomputer (IC1601).
12 ≀ 14	NC	0	Open.
15	RESET Ⓛ (RCTC)	0	Resets RCTC control (IC1703). 'Low' for resetting.
16	ATF ADJ. Ⓗ	0	Terminal for ATF automatic adjustment. Outputs 'High' pulse for offsetting external ATF circuit when microcomputer automatically performs ATF adjustment.
17	SLOW TIMING	0	Outputs timing pulse for slow shutter operation.
18	REEL FG	0	Outputs winding-side (S or T) reel FG.
19	DSP-CS	0	Chip select for serial data communication to DSP gate array (IC1506). Communication is performed during 'Low' period.
20	ATF LOCK Ⓛ	I	Goes 'Low' when ATF phase servo is normally phase-locked at playback.
21	FRAME REF.	I	Frame reference signal from DSP gate array (IC1506). ID signal for fetching in 313H into field memory.
22	DSP BUSY Ⓗ	I	BUSY signal from DSP gate array (IC1506). Inputs 'High' at mode transition to DSP. In the 'High' period, mode transition instruction, etc. to DSP will not be issued.
23 ≀ 26	RCH OUT 3 ≀ RCH OUT 0	0	Audio R-ch level parallel output (4 bits).
27 ≀ 30	LCH OUT 3 ≀ LCH OUT 0	0	Audio L-ch level parallel output (4 bits).
31 ≀ 37	NC	0	Open.
38	DSP ON Ⓛ	0	Controls DSP 5V. 'Low' for turning on DSP 5V.
39	Vss	-	Connected to GND.
40	RESET Ⓛ	I	Microcomputer reset input terminal. Reset at 'Low' input.

Table I-6 (2/3)

Pin No.	Signal designation	I/O	Function
41	Vss	-	Connected to GND.
42	X OUT	0	Crystal connection terminal.
43	X IN	I	Connects 12 MHz X'TAL.
44	SERVO-CS	I	Chip select for serial data communication with MAIN microcomputer (IC1601). Communication is performed during 'Low' period.
45	S-DATA IN	I	Inputs data for serial data communication with MAIN microcomputer (IC1601), DSP gate array (IC1506) and RCTC control (IC1703).
46	S-DATA OUT	0	Outputs data for serial data communication with MAIN microcomputer (IC1601), DSP gate array (IC1506) and RCTC control (IC1703).
47	S-CLOCK	0	Outputs clock for serial data communication with MAIN microcomputer (IC1601), DSP gate array (IC1506) and RCTC control (IC1703).
48	RCTC-CS	0	Chip select for serial data communication with RCTC control (IC1703). Communication is performed during 'Low' period.
49 〜 51	NC	0	Open.
52	Vss	-	Connected to GND.
53	Vdd	I	Connected to SS 5V.
54			
55	Vss	-	Connected to GND.
56	NC	I	Open.
57	T-REEL FG	I	Take up reel FG input terminal.
58	S-REEL FG	I	Supply reel FG input terminal.
59	LCH LEVEL	I	Audio L-ch input terminal.
60	RCH LEVEL	I	Audio R-ch input terminal.
61	Vss	-	Connected to GND.
62	ATF ERROR	I	ATF error input terminal.
63	RF DET. 1	I	PB-RF detection signal input terminal. 'High' at detection.
64	SP/LP DET.	I	SP/LP detection signal input terminal at search. LP at 'High' and SP at 'Low'.
65	RF DET. 2	I	PB-RF detection signal input terminal. 'Low' at detection. (For factory adjustment)
66	COMP. SYNC	I	Composite sync input terminal.
67	DSP V-REF	I	V sync signal from DSP gate array (IC1506). Used as reference signal for drum phase servo at playback.
68	D-PG	I	Drum PG input terminal.
69	D-FG	I	Drum FG input terminal.
70	C-FG	I	Capstan FG input terminal.
71 〜 74	OPEN	0	Open.
75	D-PWM	0	Drives drum motor.
76	C-PWM	0	Drives capstan motor.
77	C-FG	I	Capstan FG input terminal.
78			
79	LANC IN	I	Inputs data for LANC communication.
80	LANC OUT	0	Outputs data for LANC communication.
81 〜 85	NC	0	Open.

Table I-6 (3/3)

<table>
<tr><th>Pin No.</th><th>Signal designation</th><th>I/O</th><th>Function</th></tr>
<tr><td>86</td><td>Vss</td><td>-</td><td>Connected to GND.</td></tr>
<tr><td>87</td><td>SHIFT Ⓗ/LOAD Ⓛ</td><td>I</td><td>Controls parallel to serial conversion of audio data.
* Refer to pin 19 of KEY microcomputer (IC001).</td></tr>
<tr><td>88</td><td>Vss</td><td>-</td><td>Connected to GND.</td></tr>
<tr><td>89</td><td rowspan="2">Vdd</td><td rowspan="2">I</td><td rowspan="2">SS 5V.</td></tr>
<tr><td>90</td></tr>
<tr><td>91</td><td>REC Ⓗ</td><td>0</td><td>Controls REC amplifier.
'High' for REC.</td></tr>
<tr><td>92</td><td>FE ON Ⓗ</td><td>0</td><td>Controls oscillation of FE head.
'High' for erasure.</td></tr>
<tr><td>93</td><td>NC</td><td>0</td><td>Open.</td></tr>
<tr><td>94</td><td>TS B</td><td>0</td><td>ATF lock sample/hold pulse.
'High' for sampling and 'Low' for holding.</td></tr>
<tr><td>95</td><td>ATF SW</td><td>0</td><td>Switches ATF BPF.
'Low' at playback in f1 and f2 tracks.
'High' at playback in f3 and f4 tracks.</td></tr>
<tr><td>96</td><td>SEL 2</td><td rowspan="2">0</td><td rowspan="2">Controls frequency of ATF PILOT signal.
<table>
<tr><th></th><th>f1</th><th>f2</th><th>f3</th><th>f4</th></tr>
<tr><td>SEL 1</td><td>H</td><td>L</td><td>H</td><td>L</td></tr>
<tr><td>SEL 2</td><td>H</td><td>H</td><td>L</td><td>L</td></tr>
</table></td></tr>
<tr><td>97</td><td>SEL 1</td></tr>
<tr><td>98</td><td>HEAD SW PULSE</td><td rowspan="2">0</td><td rowspan="2">Outputs head switching pulse.</td></tr>
<tr><td>99</td><td>HEAD SW PULSE (RCTC)</td></tr>
<tr><td>100</td><td>CAPSTAN ON Ⓗ</td><td>0</td><td>Turns ON/OFF capstan.</td></tr>
</table>

3-1-6 Pin functions of RCTC control (IC1703)

Table I-7

Pin No.	Signal designation	I/O	Function
1	-	I	Unused. Connected to SS 5V.
2	NC	0	Open.
3	REC AREA	0	Outputs recording area for RCTC signal. (For switch inside IC1701)
4	PB Ⓗ	0	Switches REC/PB for REC/PB-RF IC (IC1701).
5	FM-DATA	I/O	RCTC FM-DATA signal input/output terminal.
6	Vss	-	Connected to GND.
7	CLOCK	I	Terminal for inputting CLOCK signal in PLL with PB RCTC-RF signal.
8	S/P	I	Serial/parallel communication switching terminal. 'High': Serial, 'Low': Parallel. (Connected to SS 5V.)
9	NC	0	Open.
10			
11	TEST 1	I	Test terminals. Fixed to 'Low'.
12	TEST 2		
13	-	I	Unused. Connected to GND.
14	NC	0	NC
15	RCTC AREA	0	Outputs RCTC recording area. (For switch inside head amplifier)
16	AFTER REC Ⓗ	0	Turns ON the REC and PB amplifiers simultaneously at after-recording.
17	REC BIAS CONT.	0	Controls DC bias of REC amplifier.
18	Vss	-	Connected to GND.
19	Vdd	I	Connected to SS 5V.
20 ~ 23	NC	0	Open.
24	HEAD SW PULSE	I	Inputs head switching pulse.
25	-	I	Unused. Connected to GND.
26	-	I	Unused. Connected to GND.
27	HD (EVF)	I	Inputs sync signal.
28	RCTC-HD	0	Outputs pseudo horizontal sync signal in RCTC section at after-recording.
29	MASK	0	Masks video area in RCTC section at after-recording.
30	X OUT	0	Crystal connection terminal.
31	Vss	-	Connected to GND.
32	X IN	I	Crystal connection terminal.
33	NTSC Ⓗ/PAL Ⓛ	I	NTSC/PAL switching terminal.
34 ~ 36	NC	-	Open.
37	-	I	Unused. Connected to GND.
38	-	I	Unused. Connected to GND.
39	-	I	Unused. Connected to GND.
40	-	I	Unused. Connected to SS 5V.
41	RESET Ⓛ	I	System reset input terminal.
42	Vss	-	Connected to GND.
43	Vdd	I	Connected to SS 5V.
44	S-DATA OUT	0	Outputs data for serial communication with SERVO microcomputer (IC104).
45	S-CLOCK	I	Inputs clock for serial communication with SERVO microcomputer (IC104).
46	S-DATA IN	I	Inputs data for serial communication with SERVO microcomputer (IC104).
47	RCTC-CS	I	Chip select for serial communication with SERVO microcomputer (IC104).
48	-	I	Unused. Connected to GND.

3-1-7 Data communication

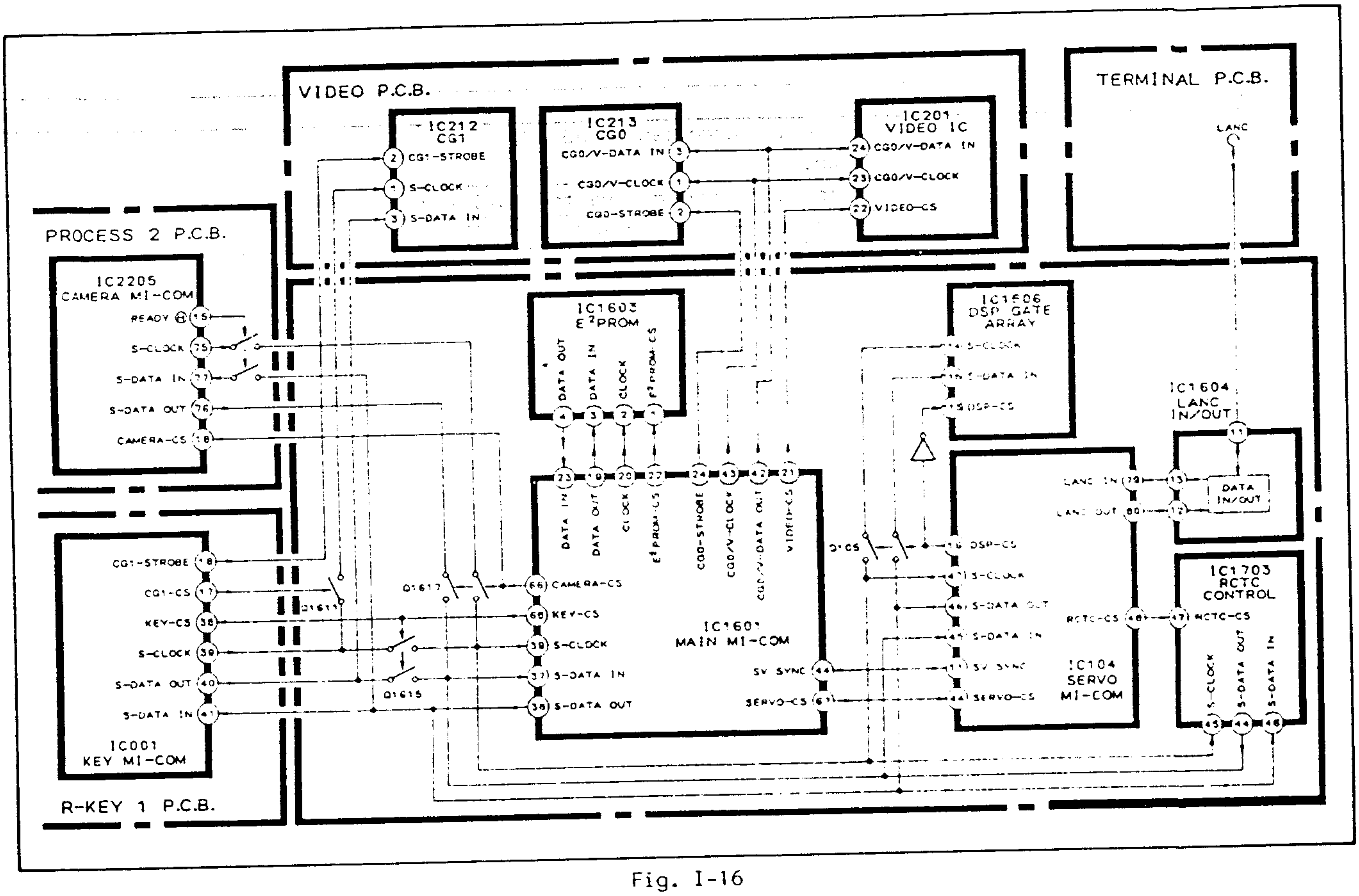

VIDEO P.C.B.
IC212
CG1
CG1-STROBE
S-CLOCK
S-DATA IN
IC213
CG0
CG0/V-DATA IN
CG0/V-CLOCK
CG0-STROBE
IC201
VIDEO IC
CG0/V-DATA IN
CG0/V-CLOCK
VIDEO-CS
TERMINAL P.C.B.
LANC
PROCESS 2 P.C.B.
IC2205
CAMERA MI-COM
READY
S-CLOCK
S-DATA IN
S-DATA OUT
CAMERA-CS
IC1603
E²PROM
DATA OUT
DATA IN
CLOCK
E²PROM-CS
IC1606
DSP GATE
ARRAY
S-CLOCK
S-DATA IN
DSP-CS
IC1604
LANC
IN/OUT
DATA
IN/OUT
LANC IN
LANC OUT
DATA IN
DATA OUT
CLOCK
E²PROM-CS
CG0-STROBE
CG0/V-CLOCK
CG0/V-DATA OUT
VIDEO-CS
CG1-STROBE
CG1-CS
KEY-CS
S-CLOCK
S-DATA OUT
S-DATA IN
IC001
KEY MI-COM
Q1611
Q1617
Q1615
CAMERA-CS
KEY-CS
S-CLOCK
S-DATA IN
S-DATA OUT
IC1601
MAIN MI-COM
SV SYNC
SERVO-CS
Q1613
DSP-CS
S-CLOCK
S-DATA OUT
S-DATA IN
SV SYNC
SERVO-CS
IC104
SERVO
MI-COM
RCTC-CS
IC1703
RCTC
CONTROL
RCTC-CS
S-CLOCK
S-DATA OUT
S-DATA IN
R-KEY 1 P.C.B.

Fig. I-16

In this camcorder, the following two serial data communications are carried out:

1) Bidirectional communication between the main microcomputer and the CAMERA/KEY/SERVO microcomputer, the SERVO microcomputer and the RCTC control.
2) Unidirectional communication from the KEY microcomputer to the CG1 IC, from the MAIN microcomputer to the CG0 IC/VIDEO IC, and from the SERVO microcomputer to the DSP gate array.

° Bidirectional communication between the MAIN microcomputer and the CAMERA/KEY/SERVO microcomputer

Communication control is totally conducted by the CS (CHIP SELECT) signal issued from the MAIN microcomputer. The amount of data interchanged in communication is as follows:

Between MAIN and CAMERA microcomputers .... 8 bits x 4
Between MAIN and KEY microcomputers .... 8 bits x 8
Between MAIN and SERVO microcomputers ..... 8 bits x 8

The key input signal, camcorder mode signal, mechanism check switch signal, and other data signals are interchanged in communication.

When communication with the KEY microcomputer is required, the MAIN microcomputer sets the KEY-CS signal at pin 68 (IC1601) to 'High' level for indicating a communication request to the KEY microcomputer. It also establishes a communication link by turning on Q1615. Then, the KEY microcomputer sends the S-CLOCK signal (from pin 39) and the S-DATA signal (from pin 40) to the MAIN microcomputer. When the MAIN microcomputer receives the S-DATA signal (at pin 37), it initiates bidirectional serial data communication.

In the same fashion, the MAIN microcomputer outputs the CAMERA-CS signal (from pin 66) and the SERVO-CS signal (from pin 61) to the CAMERA and SERVO microcomputers respectively to initiate serial data communication.

Receiving the SVSYNC signal from pin 11 of the SERVO microcomputer, the MAIN microcomputer provides vertical synchronization and controls chip selection so that communication with the microcomputer is carried out once per vertical interval while preventing an overlap of vertical intervals. The S-DATA OUT signal appearing at pin 38 of the MAIN microcomputer contains data to be sent to each of other microcomputers, but only while the CS signal is output, each of them recognizes that the data is valid.

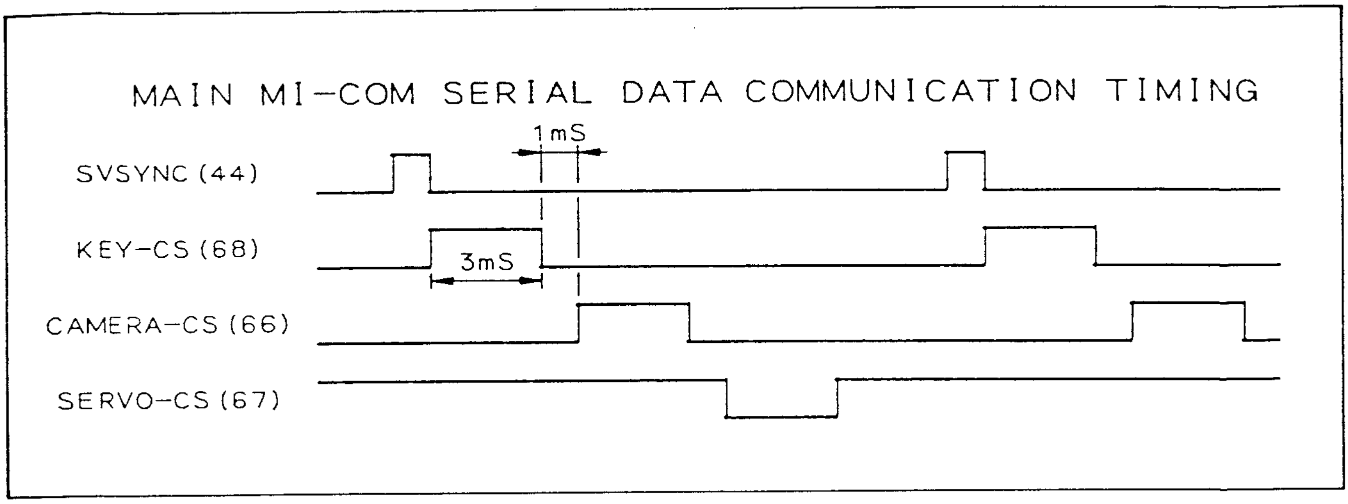


Fig. 1-17

° Unidirectional communication from the KEY microcomputer to the CG1

The title/date display character data is transferred from the KEY microcomputer to the CG1. More specifically, the character data is input from pin 40 of the KEY microcomputer to the CG1 on an 8-bit basis serially. The S-CLOCK signal, used for read-in clocking, is passed through Q1611 and applied to the CG1 only while the CG1-CS signal (from pin 17) is 'High'. Upon receiving the CG1-STROBE signal after input of the 8-bit serial data, the CG1 recognizes that the relevant data is valid for reading.

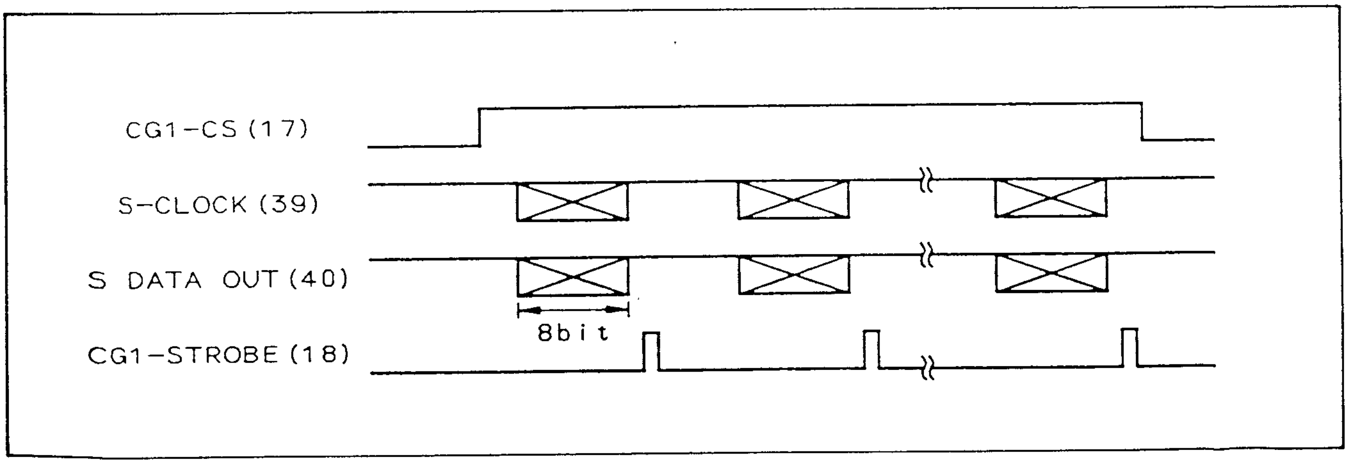


Fig. I-18

° Unidirectional communication from the MAIN microcomputer to the CG0/
Unidirectional communication from the MAIN microcomputer to the VIDEO IC

The MAIN microcomputer transfers the viewfinder display character data to the CG0, and it also transfers the mode changeover data (Hi8, NORM, PB, REC, etc.) and character setup data to the VIDEO IC. More specifically, the data is input from pin 42 of the MAIN microcomputer to each of these two ICs. The validity of data is indicated using the CG0-STROBE signal (from pin 24) and the VIDEO-CS signal (from pin 21). That is, in data transfer to the CG0, the CG0-STROBE signal is given to the CG0 after input of the 8-bit serial data (in the same manner as for communication from the KEY microcomputer to the CG1). Thus, the CG0 recognizes that the relevant data is valid for reading. In data transfer to the VIDEO IC, while the VIDEO-CS signal remains 'Low', the VIDEO IC recognizes that 19 bits of 24-bit data are valid for reading.

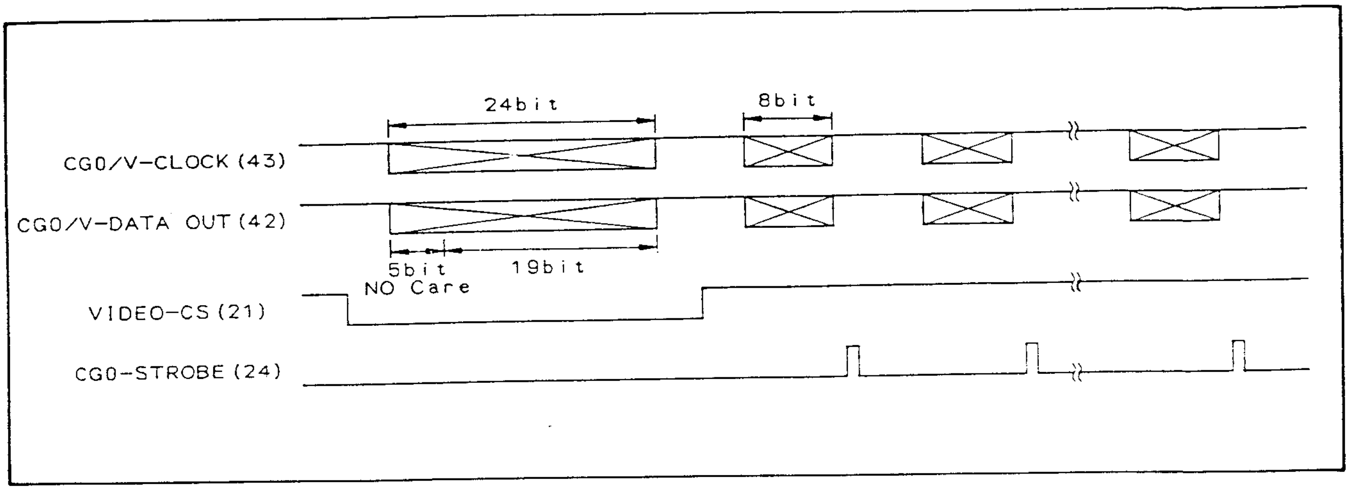

24bit
8bit
CG0/V-CLOCK (43)
CG0/V-DATA OUT (42)
5bit
19bit
NO Care
VIDEO-CS (21)
CG0-STROBE (24)

Fig. I-19

° Unidriectional communication from the SERVO microcomputer to the DSP gate array

The DSP gate array (IC1506), which serves as a kernel circuit for digital signal processing, is controlled under direction of the SERVO microcomputer. That is, the control data for each DSP operation mode is transferred from the SERVO microcomputer to the DSP gate array. While the DSP-CS signal (from pin 19) is 'Low', 24 bits (8 bits x 3) of control data are read in with timing of the DSP-CLOCK signal (from pin 43).

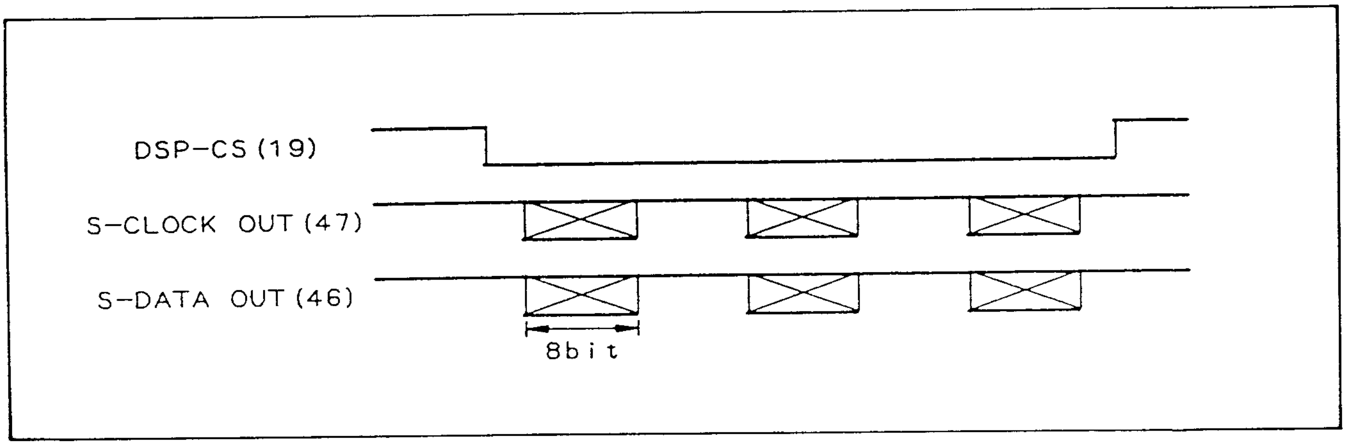

DSP-CS (19)
S-CLOCK OUT (47)
S-DATA OUT (46)
8bit

Fig. I-20

° Bidirectional communication between the SERVO microcomputer and RCTC control

RCTC control IC is controlled by the SERVO microcomputer. The SERVO microcomputer transfers the mode chargeover data to the RCTC control, and the RCTC control sends back mode and RCTC data to the SERVO microcomputer when the SERVO microcomputer sets the RCTC-CS signal at pin 48 to 'Low' level . (Data: 8 bits x 6)

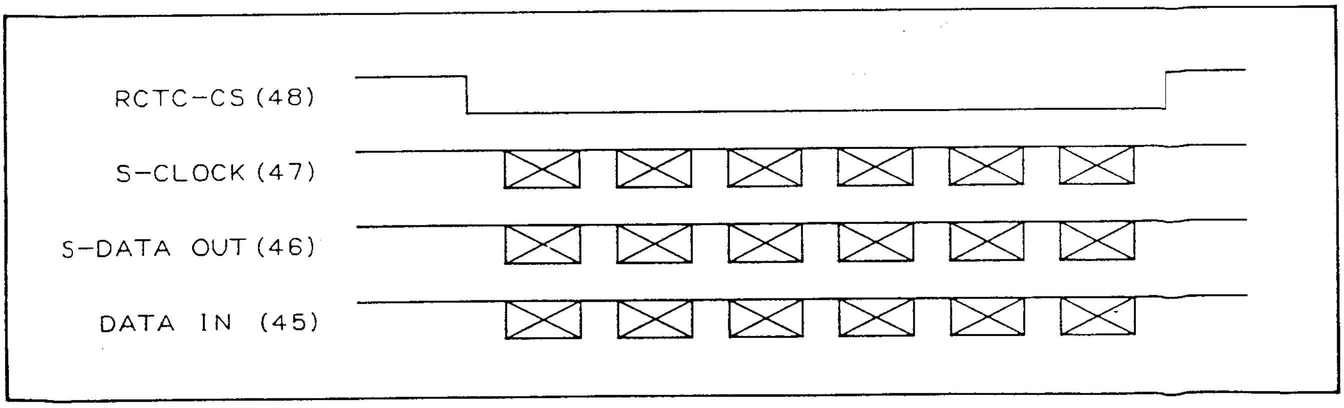

RCTC-CS (48)
S-CLOCK (47)
S-DATA OUT (46)
DATA IN (45)

Fig. I-21

- ° Bidirectional communication between the SERVO microcomputer and LANC IN/OUT IC

  LANC IN/OUT IC is just a connector between the SERVO microcomputer and an editor. This communication is the same format as LANC.

3-1-8 Safety functions

To prevent a physical damage or jamming of tape due to improper setting, this camcorder carries out the warning indication processing, key-input rejection, or operational restriction as mentioned below.

(1) Detection of decrease in battery voltage

The separate detection circuits are provided for checking the low levels of main and lithium batteries.

° Detection of decrease in main battery voltage

The following three levels of main battery are detectable during operation.

(UNDER CUT 1)
When the voltage level at main battery terminal decreases below 5.65 V, the POWER LED indicator flashes and the 'BATT' warning message blinks on the viewfinder screen. Under this condition, the key input and operation are not restricted (the normal operation can be continued).
Note, however, that only the POWER and EJECT keys are acceptable after the camcorder is stopped once.
If the UNREG 6V power decreases below the predetermined allowable voltage level, the low voltage detecting level at pin 51 of the MAIN microcomputer decreases also and the UNDER CUT 1 state is recognized in the microcomputer. Knowing this state, the MAIN microcomputer informs the KEY microcomputer of it through serial data communication. Then, the MAIN microcomputer indicates the warning on the viewfinder screen with the CGO/V-DATA OUT signal from pin 42, and the KEY microcomputer flashes the POWER LED indicator (from pin 47) and blinks 'BATT' on the LCD.

(UNDER CUT 2)
If the UNREG 6V power further decreases below 5.45 V, the power-off state is taken automatically through the stop state.
In the same manner as for the UNDER CUT 1, the low voltage detecting level at pin 51 of the MAIN microcomputer is detected in the microcomputer. Thus, upon detection of the low voltage level of less than 5.45 V, the microcomputer stops the mechanisms and turns the power off.

(SHUT-OFF)
If the main battery voltage drops rapidly below 4.5 V, the E5 DET. IC (IC1605) makes the E5 DET. SIGNAL (from pin 1) 'Low' to apply the RESET Ⓛ signal to pin 32 of the MAIN microcomputer (IC1601). Thereby, the MAIN microcomputer is reset to shut the power off immediately.

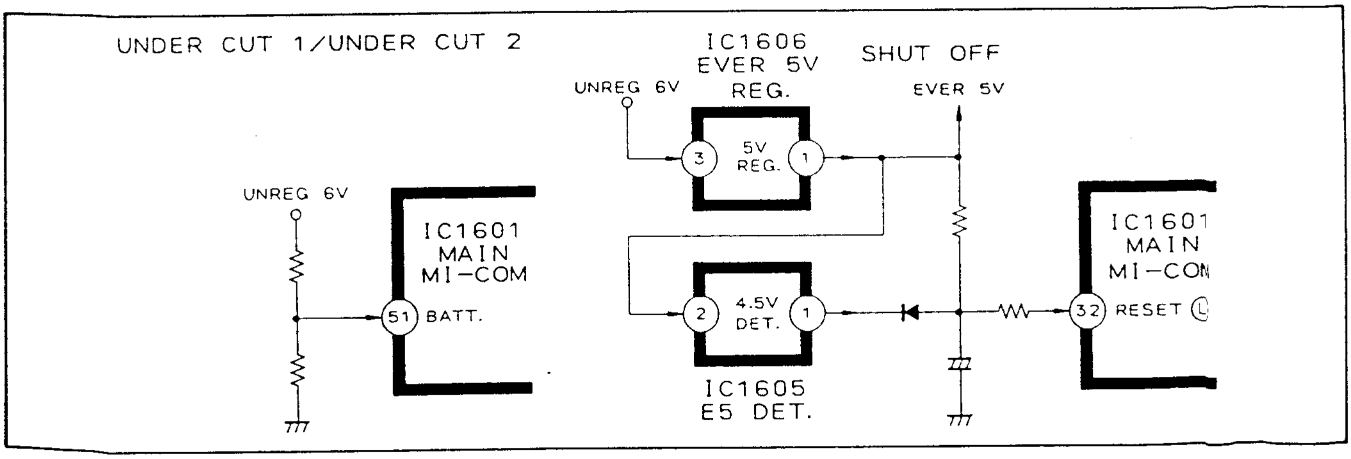


Fig. I-22

° Detection of decrease in lithium battery voltage

If the voltage level at lithium battery terminal decreases below approx. 2.7 V, pin 2 of IC002 goes 'Low' to let the KEY microcomputer know the low voltage level of lithium battery. Knowing this condition, the KEY microcomputer informs the MAIN microcomputer of it througn serial data communication. Then, the MAIN microcomputer blinks 'DATE BATT' on the viewfinder screen with th CGO-V-DATA OUT signal from pin 42.

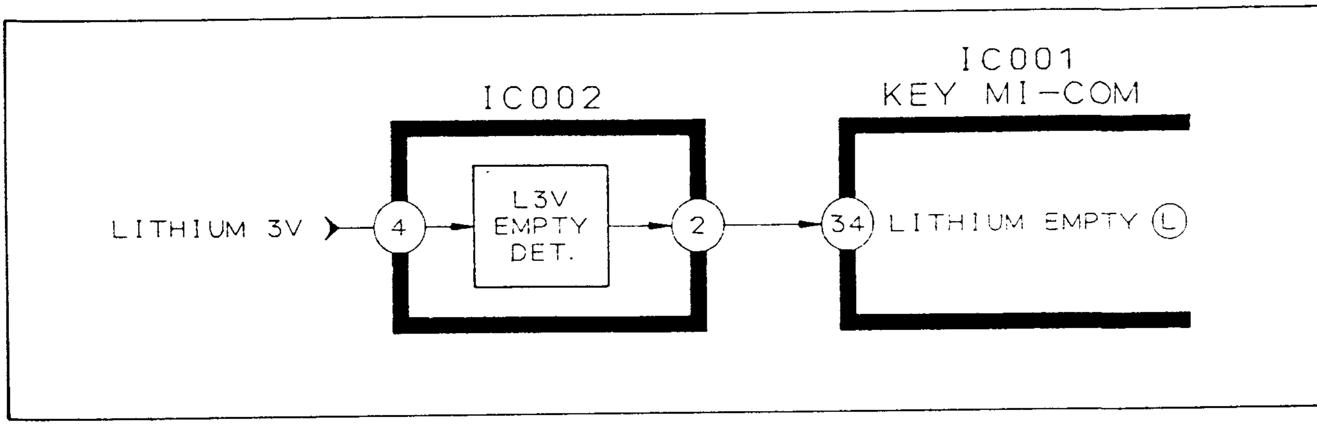


Fig. I-23

(2) Dew condensation

The dew (moisture condensation) detecting function is provided to circumvent jamming of tape due to possible sticking.

If moisture condensation is detected during operation, the mechanism is put in the stop state and the POWER LED indicator flashes for warning. Also, 'd' and 'DEW' blink on the LCD and the viewfinder screen respectively to let the user know detection of moisture condensation. Under this condition, other keys than the POWER and EJECT keys become ineffective. Even if the tape cassette is inserted, its loading sequence is not carried out. After 'dew' condition is removed, the camcorder sets up the stop mode to get ready for normal operation.

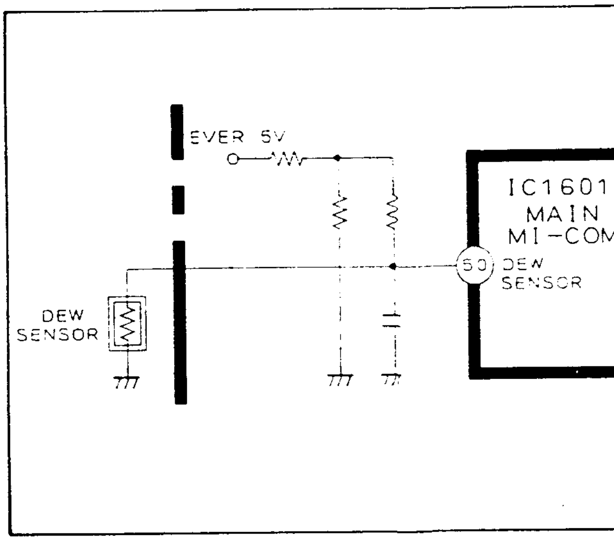


Fig. I-24

When the camcorder is under 'dew' condition, the DEW sensor equipped on the mechanical chassis increases its resistance to increase the DEW detection voltage input to pin 50 of the MAIN microcomputer. If the level of this voltage rises above the predetermined value, the microcomputer judges that dew condensation has occurred. Then, the microcomputer carries out the mode transitic and provides the warning indication.

(DEW EJECT)

If the videotape sticks to the drum, it cannot be run only with the takeup reel. In this event, the supply reel must be used also. Upon detection of dew condensation, the 'DEW EJECT' sequence is carried out as indicated below.

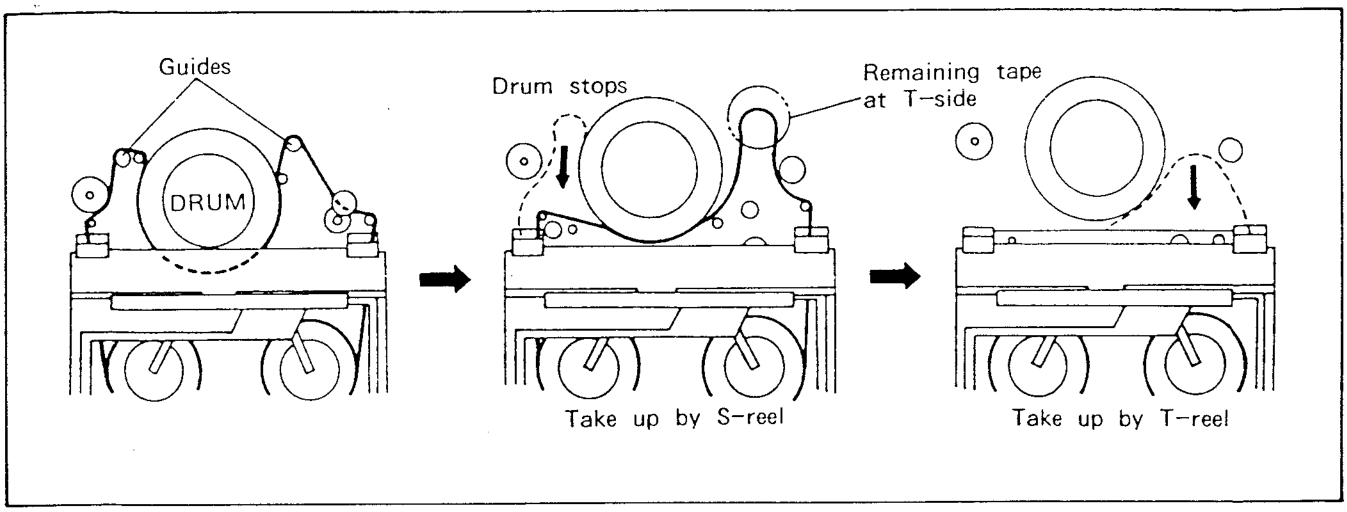

Guides
DRUM
Drum stops
Take up by S-reel
Remaining tape at T-side
Take up by T-reel

Fig. I-25

(3) End-of-tape check

If the videotape is run up to its end, the tape guide may be damaged or the head drum may be squeezed with the tape. To prevent such an event, the end-of-tape check is conducted to detect the end of tape during operation. Upon detection of the end of tape, the tape is stopped immediately.

The end-of-tape detecting LED is turned on/off with the TAPE SENS LED singal appearing at pin 27 of the main microcomputer. It constantly flashes for one msec per 17 msec. If the signal across pins 46 and 47 goes 'Low' twice in succession, the microcomputer recognizes the end of tape and applies reverse-rotation braking to the capstan motor to stop the mechanism.

Also, if the EOT and BOT input signals go 'Low' twice in succession, the microcomputer judges that the cassette is not loaded. In this case, 'CASSETTE' blinks on the viewfinder screen.

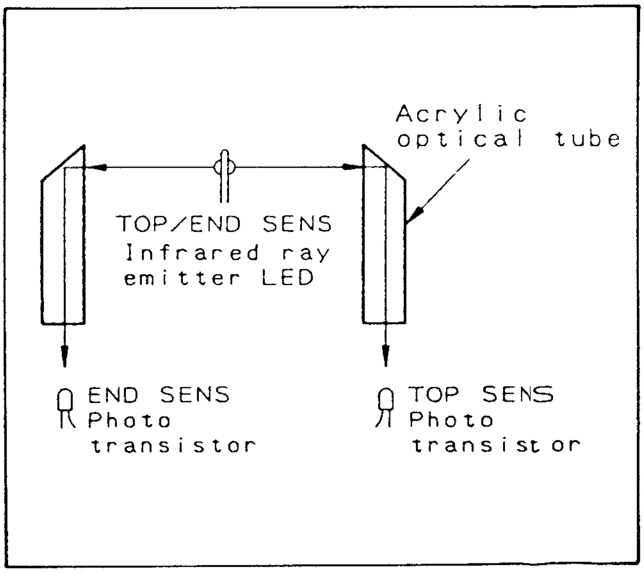

Acrylic optical tube
TOP/END SENS
Infrared ray emitter LED
END SENS
Photo transistor
TOP SENS
Photo transistor

Fig. I-26

(4) Pause timer

In the REC PAUSE or STILL mode, the head drum rotates with the tape wound around it. If this condition persists for a certain period of time, the tape may wear or the head may be contaminated with magnetic oxides. To prevent this, if the REC PAUSE state is kept for seven minutes, it is automatically changed over to the STOP mode and the power is turned off. Also, if the STILL mode is kept for seven minutes, it is automatically changed over to the STOP mode with the power being turned on.

(5) Trouble stop (error)

The error detection sequence is carried out by the MAIN microcomputer (IC1601) and the SERVO microcomputer (IC104). Upon detection of an error, the mechanism is forced to stop. In this state, only the POWER and EJECT keys are acceptable. Note, however, that these keys may also be ineffective on occurrence of a certain kind of error.

In the event of trouble, the POWER LED indicator flashes, 'EJECT' blinks on the viewfinder screen and also 'EJECT' blinks on the LCD for warning.

Table I-8

Event	State	Detection
Drum error	1. Error detection mode : At startup/during operation 2. Frequency during operation: 600 Hz 3. Error detection level At startup : 240 Hz or less During operation : 200 Hz or less 4. Error detection time At startup : An error is indicated if the detection level does not exceed 100 msec within a period of 5 msec after issuance of the startup instruction. During operation : 100 msec or more	SERVO MI-COM IC104-68 D-FG
Capstan error	1. Error detection mode : Detected only at startup of the capstan in unloading. 2. Error detection level : 40% or less of the rated rotating speed. 3. Error detection time : If 40% or less of the rated rotating speed is exceeded at least once within a period of 2 sec after issuance of the startup instruction.	SERVO MI-COM IC104-70 C-FG
Reel error	1. Error detection mode : Each mode in which the reel is rotated. 2. Error detection level and detection time: Under condition that the rated rotating speed in each mode is 'n' with respect to the maximum diameter of tape winding: PLAY, REC, FF SEARCH, FR SEARCH } An error is indicated if 'n x 1/2' is reached. FF/REW } An error is indicated if 'n x 1/5' is reached. UNLOAD } An error is indicated if no change found during one sec.	MAIN MI-COM IC1601-45 REEL FG
Loading error	An error is indicated if the mode selection data remains unchanged for the predetermined period of time. Mode transition between EJECT and UNLOAD ..... 2 msec Mode transition between UNLOAD and STOP ...... 8 msec Mode transition between STOP and PINCH ON .... 2 msec	MAIN MI-COM IC1601-16 ~ 18 MODE 1 ~ 3

(6) Full-top loading

To prevent the beginning of tape from getting onto the drum edge in loading, the following special sequence is performed upon detection of the beginning of tape after the cassette is inserted.

The takeup reel tenses the tape first, and then the drum motor is run in reverse slightly for approx. one second. This causes the claw on the upper drum to push the tape away to the edge of drum. And, reverse-rotation braking is applied to the drum motor to wind the tape on the takeup reel again. Thereafter, the normal loading sequence is carried out.

3-1-9 Servo circuit

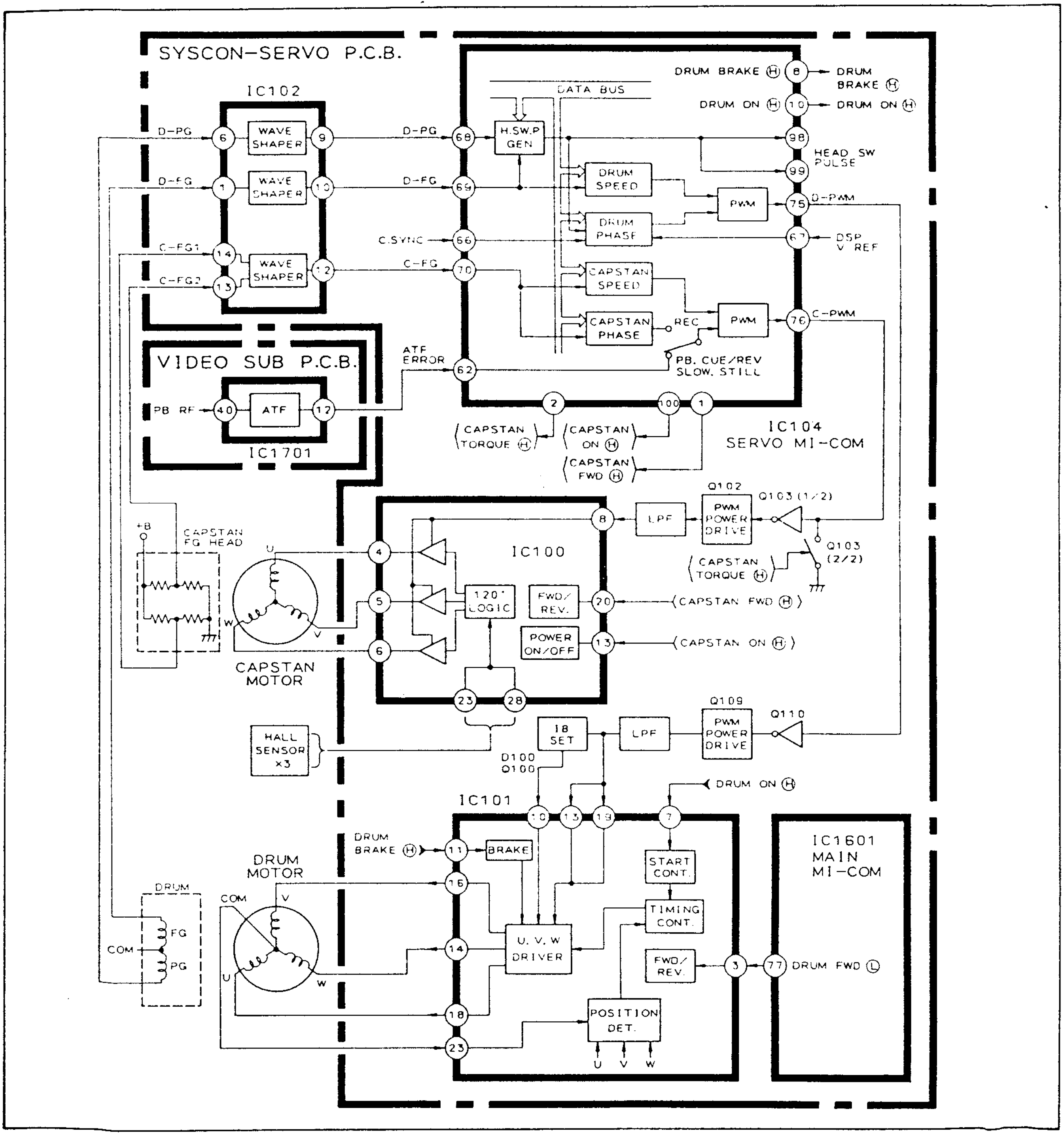

SYSCON-SERVO P.C.B.
IC102
D-PG
6
WAVE SHAPER
9
D-FG
1
WAVE SHAPER
10
C-FG1
14
C-FG2
13
WAVE SHAPER
12
VIDEO SUB P.C.B.
PB RF
40
ATF
12
IC1701
D-PG
68
H.SW.P GEN
D-FG
69
C.SYNC
66
C-FG
70
ATF ERROR
62
DATA BUS
DRUM SPEED
DRUM PHASE
CAPSTAN SPEED
CAPSTAN PHASE
REC
PB. CUE/REV SLOW. STILL
PWM
PWM
DRUM BRAKE Ⓗ
8
DRUM BRAKE Ⓗ
DRUM ON Ⓗ
10
DRUM ON Ⓗ
98
99
HEAD SW PULSE
75
D-PWM
67
DSP V REF
76
C-PWM
2
100
1
CAPSTAN TORQUE Ⓗ
CAPSTAN ON Ⓗ
CAPSTAN FWD Ⓗ
IC104 SERVO MI-COM
Q102
PWM POWER DRIVE
Q103 (1/2)
Q103 (2/2)
CAPSTAN TORQUE Ⓗ
LPF
+B
CAPSTAN FG HEAD
U
V
W
CAPSTAN MOTOR
IC100
4
5
6
8
120° LOGIC
FWD/ REV.
POWER ON/OFF
20
13
23
28
CAPSTAN FWD Ⓗ
CAPSTAN ON Ⓗ
HALL SENSOR ×3
18 SET
D100
Q100
LPF
Q109
PWM POWER DRIVE
Q110
DRUM ON Ⓗ
IC101
10
13
19
7
DRUM BRAKE Ⓗ
11
BRAKE
16
14
18
23
START CONT.
TIMING CONT.
U. V. W DRIVER
FWD/ REV.
POSITION DET.
U V W
3
DRUM MOTOR
COM
V
U
W
DRUM
FG
PG
COM
IC1601 MAIN MI-COM
77
DRUM FWD Ⓛ

Fig. I-27

The drum and capstan servoloops are controlled principally under direction of the SERVO microcomputer (IC104) mounted on the SS P.C.B.

(1) Drum servocontrol

The minuscule outputs from the FG and PG coils equipped on the drum motor are subjected to waveform shaping in IC102 to provide logical levels (0 to 5 V). Then, the logical-level signals are input to the SERVO microcomputer. Under the normal operation (recording/playback), the D-FG signal as a frequency of 600 Hz. Using these signals, the SERVO microcomputer carries out the speed servocontrol and the phase servocontrol to output the D-PWM signal from pin 75.

The D-PWM output signal is subjected to power driving by Q109 and converted to DC voltage through the low-pass filter. The converted DC voltage is applied to pins 13 and 19 of the drum motor driver (IC101). According to the level of this drive voltage, the voltage applied to the winding of three-phase motor is changed to control the rotating speed of drum. The IB SET block equipped at the location of pin 10 is used for reducing electromagnetic noise generated by the drum motor, and internal correction is made for variation in the level of drive voltage (at pins 13 and 19).

The switch timing control of the three-phase motor is conducted through detection of a counter e.m.f. voltage produced from each winding. The D-PWM signal mentioned above is used to start up the motor. For forward/reverse rotation control, the DRUM FWD Ⓛ signal output from the main microcomputer is used.

(2) Capstan servocontrol

The FG1 signal from the capstan motor and the FG2 signal having the reverse phase are subjected to waveform shaping by IC102. Then, these signal are frequency-multiplied (doubled) respectively to provide logical-level inputs to the SERVO microcomputer. In recording, the frequency is 1325 Hz. On receipt of these input signals, the SERVO microcomputer carries out speed servocontrol and phase servocontrol. In playback, the ATF ERROR signal input to pin 62 is used to conduct phase servocontrol. As in the drum servocontrol sequence, the C-PWM signal (result of servocontrol) is output from pin 76 and then subjected to power driving with Q102. Then, after passing through the low-pass filter, the DC voltage is input to pin 8 of the capstan motor drive (IC100) and applied for driving in each of motor phases U, V and W.

For the U/V/W switching of motor, the three Hall-effect elements are used to detect the rotor position. Thus, the switching operation is controlled.

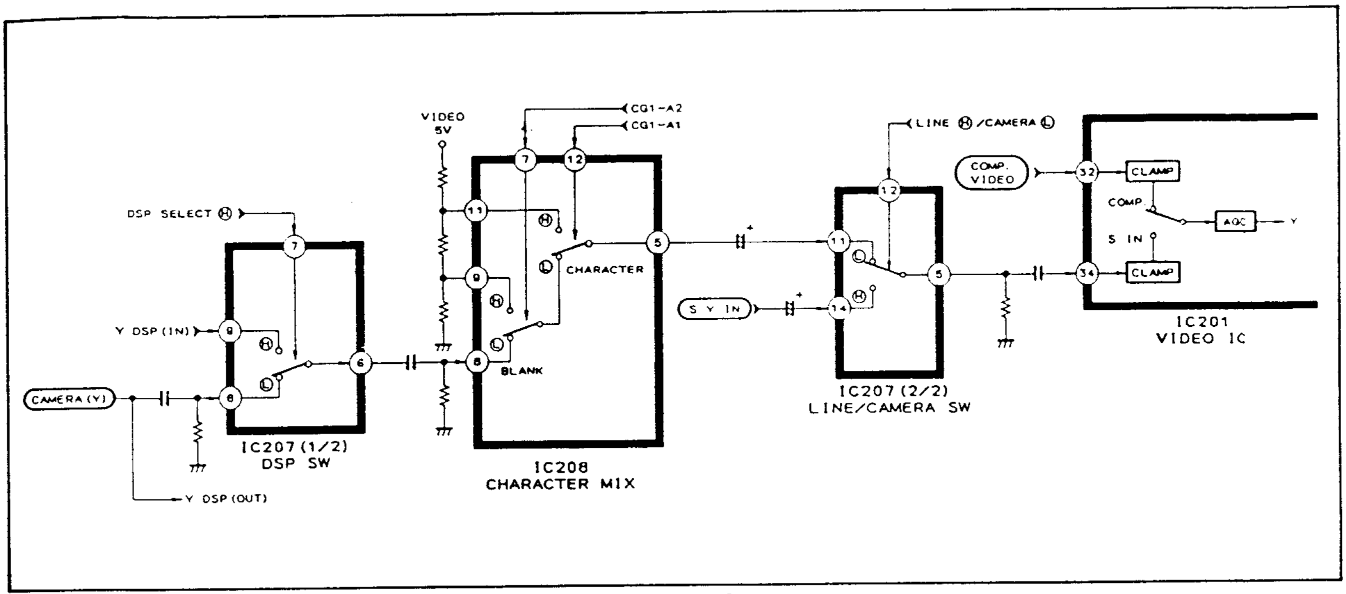
Starting of the motor is controlled by the CAPSTAN ON Ⓗ signal from the MAIN microcomputer. Also when reverse-rotation braking is applied on detection of the end of tape, the SERVO microcomputer outputs the CAPSTAN TORQUE Ⓗ signal to turn on Q103 for increasing the drive voltage to its maximum level. In this sequence, the SERVO microcomputer also sets the CAPSTAN FWD Ⓗ to 'Low' level.

3-2 Video circuit

The video circuit of this product is nearly the same as A2Hi, EX1Hi except for the change of the I/O switch IC of input section (LINE INPUT added) and that due to addition of the RCTC function. The changes alone are explained here. For details, refer to the service manual of A2Hi.

(1) Changes in recording system

1) Luminance signal

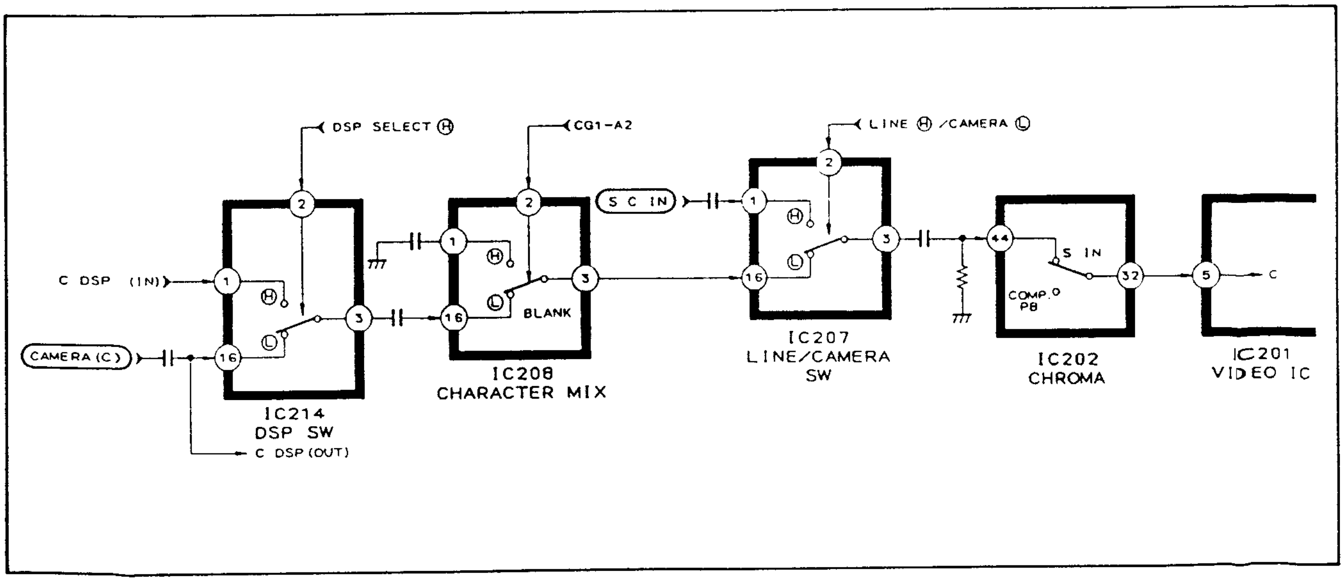


CG1-A2
CG1-A1
VIDEO 5V
7
12
11
9
8
5
Ⓗ
Ⓛ
CHARACTER
BLANK
DSP SELECT Ⓗ
Y DSP (IN)
CAMERA (Y)
Y DSP (OUT)
IC207 (1/2)
DSP SW
IC208
CHARACTER MIX
LINE Ⓗ/CAMERA Ⓛ
S Y IN
14
IC207 (2/2)
LINE/CAMERA SW
COMP. VIDEO
32
34
CLAMP
COMP.
S IN
AGC
Y
IC201
VIDEO IC

Fig. I-28

The mix circuit of Character Generator on the EX1Hi is composed of transistors, however that on the EX2Hi is composed of ICs. The LINE input is switched over by the LINE Ⓗ/CAMERA Ⓛ signal in the next step and the recording Y signal is output. (The signal flow after this is the same as that for the EX1Hi.)

2) Chrominance signal



DSP SELECT Ⓗ
CG1-A2
LINE Ⓗ/CAMERA Ⓛ
C DSP (IN)
CAMERA (C)
C DSP (OUT)
1
2
3
16
Ⓗ
Ⓛ
BLANK
S C IN
IC214
DSP SW
IC208
CHARACTER MIX
IC207
LINE/CAMERA SW
44
32
S IN
COMP.
PB
IC202
CHROMA
5
C
IC201
VIDEO IC

Fig. I-29

The mix circuit of Character Generator was changed from transistors to ICs. The LINE input is switched over in the next step to output the recording C signal. (The signal processing hereafter is the same as that for the EX1Hi.)

(2) Changes in playback system

Except for the changes in the section shared with the recording system, the playback system has a change only in the PBY output section of IC201. Also, this product has an additional switch, which turns ON the power supply to the 1HDL IC for Y/C separation only when inputting the composite signa at recording and PB mode.

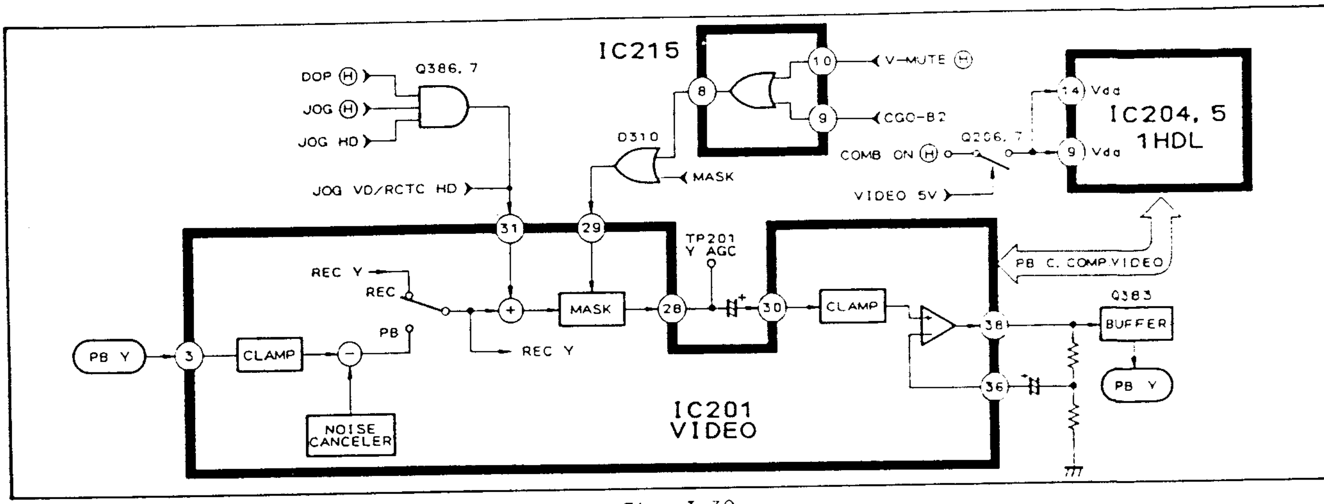

IC215
DOP Ⓗ
JOG Ⓗ
JOG HD
Q386, 7
JOG VD/RCTC HD
D310
MASK
V-MUTE Ⓗ
CGO-B2
8
9
10
14 Vdd
9 Vdd
IC204, 5
1HDL
COMB ON Ⓗ
Q206, 7
VIDEO 5V
31
29
TP201
Y AGC
PB C. COMP VIDEO
Q383
BUFFER
REC Y
REC
PB
MASK
28
30
CLAMP
38
36
PB Y
3
CLAMP
NOISE CANCELER
REC Y
IC201
VIDEO
PB Y

Fig. I-30

The luminance signal after demodulation and PBY level adjustment is input to pin 3 of IC201. The subsequent circuit up to the PB/REC switch via CLAMP and NOISE CANCELER is the same as before. Then, the luminance signal passes through the JOG VD/RCTC HD signal mix circuit. This circuit is provided for adding a vertical sync signal for speed-varied playback, and a horizontal sync signal for RCTC after-recording. The next MASK circuit is used to mask the bottom of screen at RCTC afte recording. (The PB C signal circuit uses mute block of IC202 for masking.) After masking, the luminance signal is output from pin 28. Finally, the luminance signal is input from pin 30 and output as 1 Vp-p signal from pin 38 via the operational amplifier.

3-3 RCTC circuit

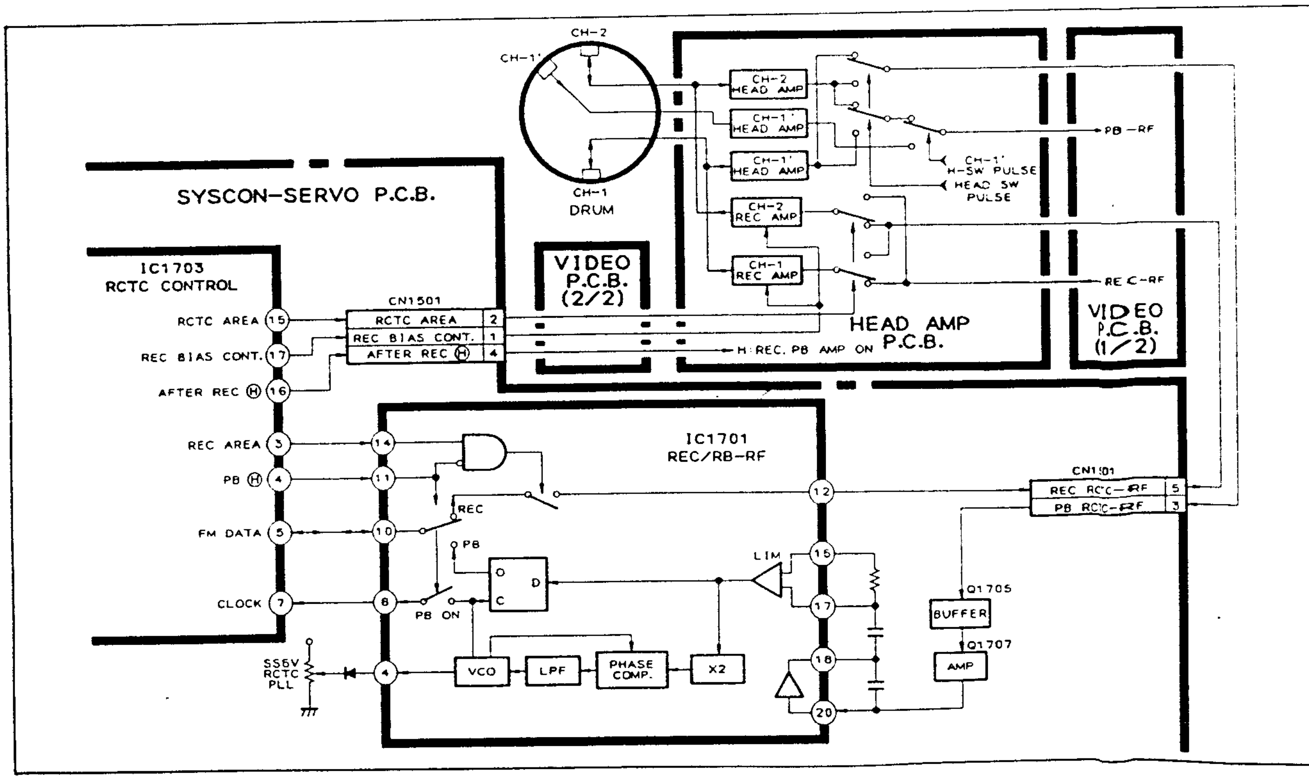

CH-2
CH-1'
CH-1
DRUM
SYSCON-SERVO P.C.B.
IC1703
RCTC CONTROL
RCTC AREA 15
REC BIAS CONT. 17
AFTER REC Ⓗ 16
CN1501
RCTC AREA 2
REC BIAS CONT. 1
AFTER REC Ⓗ 4
VIDEO P.C.B. (2/2)
CH-2 HEAD AMP
CH-1' HEAD AMP
CH-1 HEAD AMP
CH-2 REC AMP
CH-1 REC AMP
PB-RF
CH-1' H-SW PULSE
HEAD SW PULSE
REC C-RF
HEAD AMP P.C.B.
H: REC. PB AMP ON
VIDEO P.C.B. (1/2)
IC1701
REC/RB-RF
REC AREA 3
PB Ⓗ 4
FM DATA 5
CLOCK 7
14
11
10
8
4
12
15
17
18
20
REC
PB
PB ON
D
C
LIM
VCO
LPF
PHASE COMP.
X2
SS6V RCTC PLL
CN1501
REC RCTC-RF 5
PB RCTC-RF 3
Q1705
BUFFER
Q1707
AMP

Fig. I-31

(1) Recording system

The recording signal of RCTC is output from pin 5 of IC1703 (RCTC CONTROL). This signal is already frequency-modulated. 'High' and 'Low' areas of the data are modulated into 5.79 and 2.89 MHz, respectively. Then, the signal is input to pin 10 of IC1701 (REC/PB-RF). After passing through the REC/PB switch and the recording area switch, the signal is output from pin 12. Subsequently, the signal is input to the head amplifier through the VIDEO P.C.B. According to RCTC AREA signal, the recording signal is sent to the head opposite to the one which receives video signal, and it is recorded on tape.

(2) Playback system

The signal from the video head is amplified in the head amplifier P.C.B., and divided into PB-RF for video signal and PB-RF for RCTC according to head switch pulse. After division, the PB RCTC-RF signal is sent to the SS P.C.B. via the video P.C.B. In the SS P.C.B., the PB RCTC-RF signal passes through the amplifier (Q1707, IC1701-18, 20) and limiter (IC1701-15, 17). In the IC1701, this signal is synchronized with the clock in PLL with playback signal. Then, the signal is sent to IC1703 via REC/PB switch and demodulated into RCTC data according to the clock from IC1701.

° PLL

IC1701 compares the phase between a doubled playback signal and internal oscillation of 11.58 MHz to obtain an error voltage, according to which VCO is controlled. The phase-locked signal is sent to IC1703 and used for demodulation of the RCTC data.

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1-2 Supplies .... II – 1

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CHAPTER II. INFORMATION FOR REPAIR

1. List of Maintenance Tools and Supplies

1-1 Maintenance tools

Table II-1

DESCRIPTION	TOOL NO.	REMARKS
Wireless controller WL-600	DY2-1294-C00	Refer to page II-7 (to modify for Service Mode setting).
Alignment tape E (MONOSCO)	DY9-1062-000	
Alignment tape (V sweep master Hi8)	DY9-1111-500	<WR5-7CE>
Alignment tape (Tracking B with marker)	DY9-1086-001	<WR5-1CP> New
Recording current checker	DY9-1056-000	
Y/C mix amplifier II	DY9-1079-001	
Y/C separator	DY9-1093-500	
Character generator	DY9-1115-000	
Extension connector (13 pin)	DY9-1147-000	
Extension connector (11 pin)	DY9-1148-000	
Extension cable (4 pin)	DY9-1152-000	
Extension cable (3 pin)	DY9-1176-000	
Extension cable (7 pin)	DY9-1180-000	
Extension cable (2 pin)	DY9-1181-000	
Extension cable	DY9-1182-000	
Connector ass'y (7 pin)	DY9-1183-000	
Connector ass'y (14 pin)	DY9-1184-000	
Printed cord (11 pin)	DY9-1227-000	
Printed cord (13 pin)	DY9-1228-000	
Printed cord (8 pin)	DY9-1250-000	
Extension cable (7 pin)	DY9-1253-000	
Extension cable (11 pin)	DY9-1255-000	
Printed cord (24 pin)	DY9-1270-000	
Extension cable (12 pin)	DY9-1290-000	
Color bar chart	DY9-2002-000	
Gray scale chart	DY9-2005-000	
CCB4 filter	DY9-2032-000	
Color chart viewer (5600°K)	DY9-2039-220	EUROPE, H.K., etc.
	DY9-2039-240	U.K.
Viewer lamp (5600°K) (1 pc. each)	DY9-2040-000	
Gray/white chart	DY9-2045-000	

1-2 Supplies

Table II-2

DESCRIPTION	TOOL NO.	REMARKS
Dia bond No. 1663 UN1133	DY9-3008-000	To fix the tube for the flange back adjustment

* Notes: 1. For recorder mechanism, refer to the mechanical manual for MC-4B (DY8-3391-50 201) separately issued.

2. For lens and adopters, refer to the service manuals issued separately.

2. Preparation for Adjustment (Camera/Recorder)

2-1 Preparatory procedure for camera adjustment

2-1-1 Setting

(1) Preparation

- Y/C Mix Amp. II (DY9-1079-001)
- Extension cables (DY9-1176, -1182, -1183)
- Constant voltage supplier

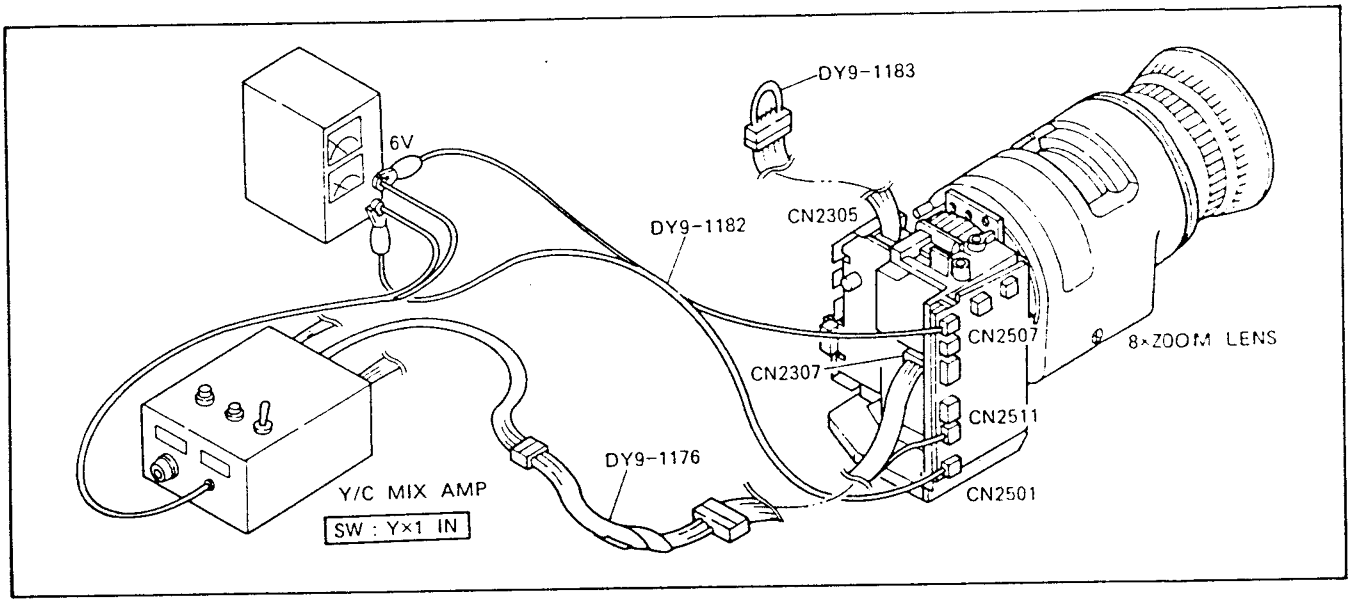

DY9-1183
6V
DY9-1182
CN2305
CN2507
8×ZOOM LENS
CN2307
CN2511
DY9-1176
Y/C MIX AMP
SW : Y×1 IN
CN2501

Fig. II-1 Cable connection

2-1-2 AWB adjustment mode

(1) Setting for automatic adjust mode (normally used mode)

- Remove the upper cover, connect the TP2801 (ADJ) of Camera-key (2) P.C.B. to ground, and push the remote control button to display the indication on the screen.

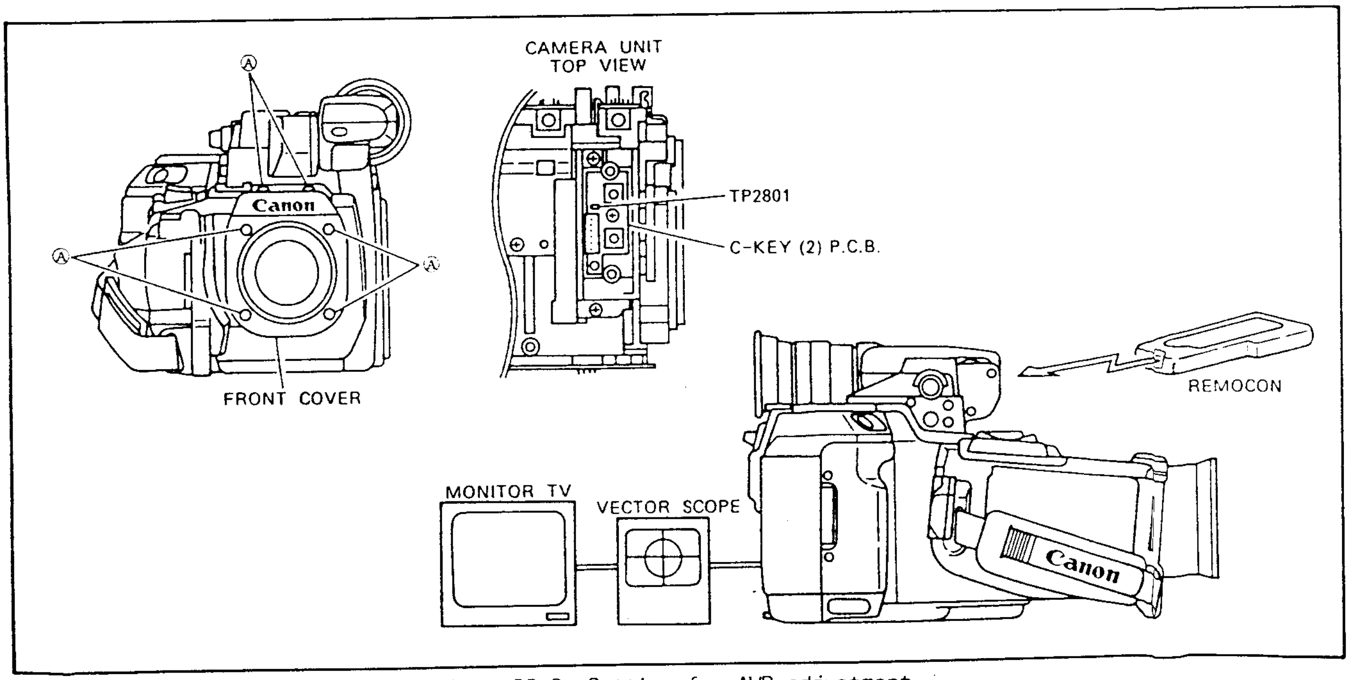

Ⓐ
Canon
Ⓐ
Ⓐ
FRONT COVER
CAMERA UNIT
TOP VIEW
TP2801
C-KEY (2) P.C.B.
REMOCON
MONITOR TV
VECTOR SCOPE
Canon

Fig. II-2 Setting for AWB adjustment

(2) Setting for manual adjustment mode

Procedures:
1) Prepare the camera unit.
2) Remove the PROCESS (2) P.C.B.
3) Remove the R2412 (connected to the pin 34 of Camera Mi-Com IC2304). Then, connect the pin 34 cf Camera Mi-Com IC to the +5 V. (By short-circuiting Ⓐ, the pin 34 can be connected to the +5 V.)
4) Reconnect the PROCESS (2) P.C.B., and reassemble other sections to set the condition shown in the Fig. II-3.
5) Connect the TP2801 (ADJ) to ground. Then, by pushing the indication button of remote controller, display the relevant character on the screen. Then, perform each adjustment.

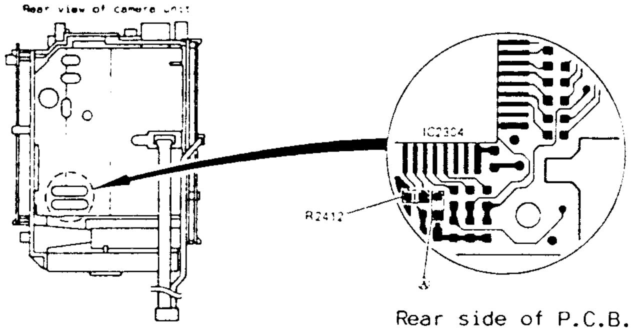
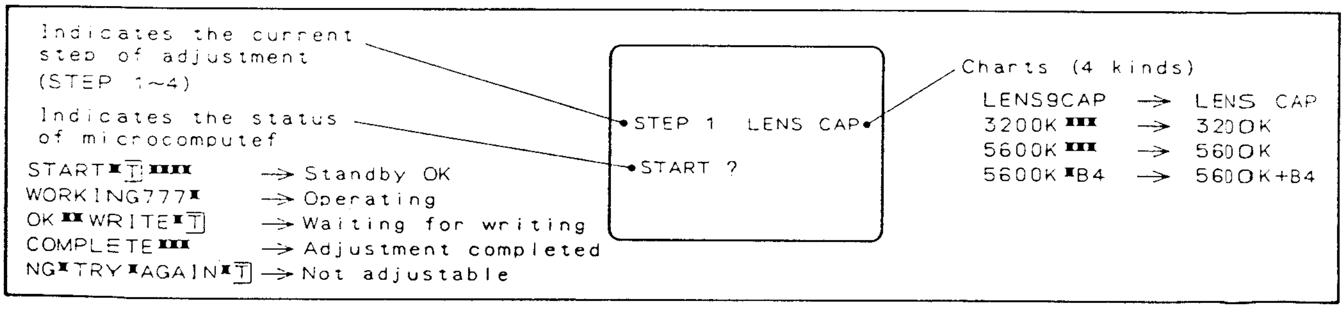

Rear view of camera unit
IC2304
R2412
A
Rear side of P.C.B.

Fig. II-3 Setting for manual adjustment

(3) Adjustment status indication

The following information is displayed in adjustment mode.



Indicates the current step of adjustment (STEP 1~4)

Indicates the status of microcomputef

START■[T]■■■■ → Standby OK
WORKING777■ → Operating
OK■■WRITE■[T] → Waiting for writing
COMPLETE■■■ → Adjustment completed
NG■TRY■AGAIN■[T] → Not adjustable

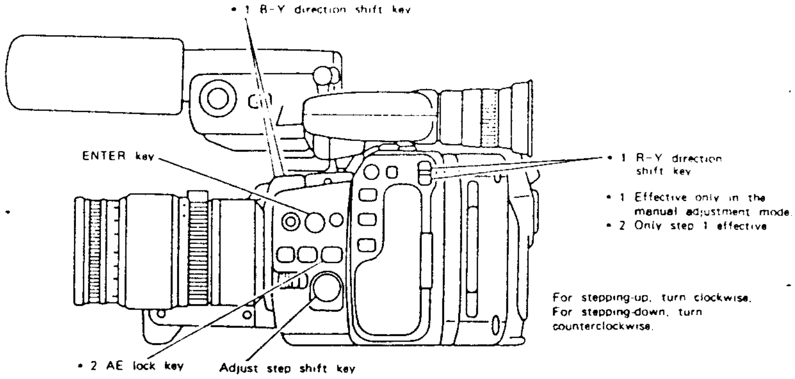
STEP 1 LENS CAP
START ?

Charts (4 kinds)
LENS9CAP → LENS CAP
3200K■■■ → 3200K
5600K■■■ → 5600K
5600K■B4 → 5600K+B4

Fig. II-4 Display of adjustment status

(4) Function of adjustment keys

The following function keys are provided for each adjustment.


• 1 B-Y direction shift key
ENTER key
• 1 R-Y direction shift key
• 2 AE lock key
Adjust step shift key

• 1 Effective only in the manual adjustment mode.
• 2 Only step 1 effective

For stepping-up, turn clockwise.
For stepping-down, turn counterclockwise.

Fig. II-5 Function of adjustment keys

2-1-3 Setting for adjustment of AF threshold level

For the adjustment of AF threshold level, the Character Generator (DY9-1115-000) is used (to display the threshold level number on a screen).

* Note: Shortcircuit the TP2511 and the pin 14 of IC2506.

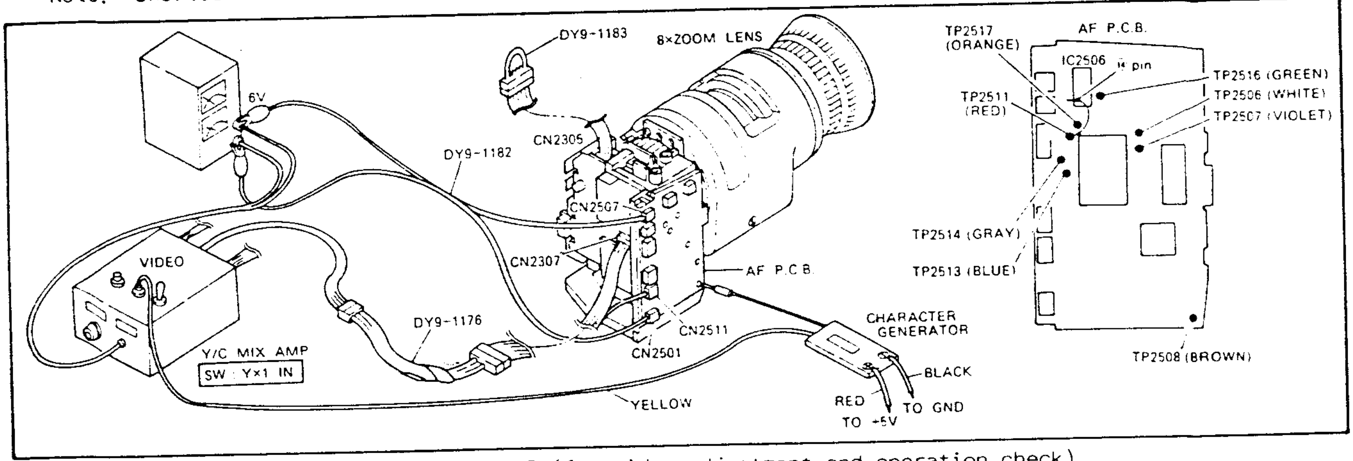

DY9-1183
8×ZOOM LENS
6V
DY9-1182
CN2305
CN2507
CN2307
AF P.C.B
VIDEO
DY9-1176
CN2511
CN2501
Y/C MIX AMP
SW : Y×1 IN
YELLOW
CHARACTER GENERATOR
BLACK
RED
TO GND
TO +5V
TP2517 (ORANGE)
AF P.C.B.
IC2506 14 pin
TP2511 (RED)
TP2516 (GREEN)
TP2506 (WHITE)
TP2507 (VIOLET)
TP2514 (GRAY)
TP2513 (BLUE)
TP2508 (BROWN)

Fig. II-6 Setting I (for video adjustment and operation check)

2-1-4 Other precautions

(1) Prior to each adjustment, energize the equipment for 3 minutes or more.

(2) Use a light box of 5600°K.

(3) "Standard angle of view"

- The "standard angle of view" is given when the charts displayed so as to meet the maximum screen of the full-scan monitor.
- With an oscilloscope, adjust the grayscale (37 μs) and the color bar (54 μs) followed by shooting.
- Shoot the white chart at its center.
- Unless otherwise specified, shooting distance must be 1.4 m (approx.)

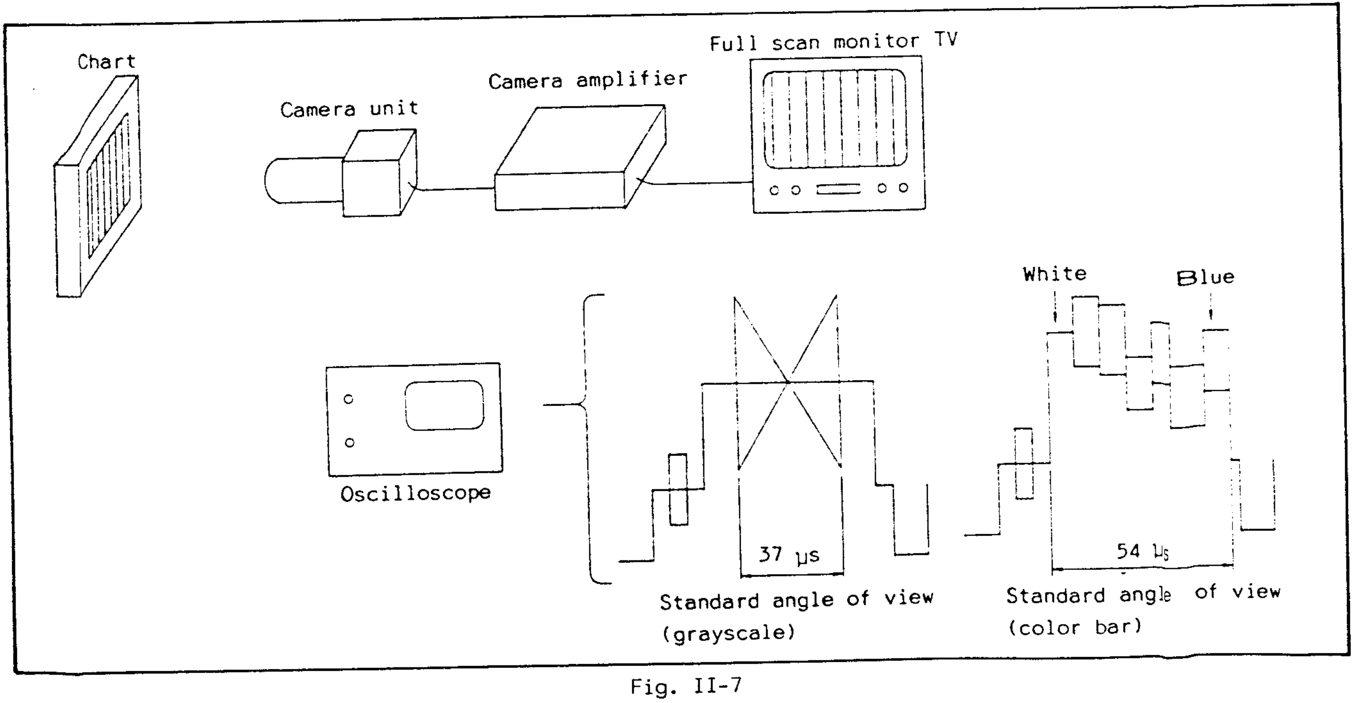


Chart
Camera unit
Camera amplifier
Full scan monitor TV
Oscilloscope
White
Blue
37 μs
54 μs
Standard angle of view (grayscale)
Standard angle of view (color bar)

Fig. II-7

2-2 Preparatory procedures for recorder adjustment

2-2-1 Basic setting

(1) Equipments

- ° Y/C separator (DY9-1093-500): Refer to Y/C separator instruction for setup input level.
- ° Extension cables (DY9-1152, -1180, -1181, -1182, -1250, -1253, -1255, -1270, -1290)
- ° Constant voltage power supply (15 V) or camera adapter
- ° Constant voltage power supply (6 V)

(2) Setting 1 (for VIDEO adjustment/operational checking)

1) Remove the AUDIO 1 and 2 P.C.B.s.

2) Supply the power with the extension cable (DY9-1181), and send the Y/C signal with extension cable (DY9-1180) to recorder-unit.

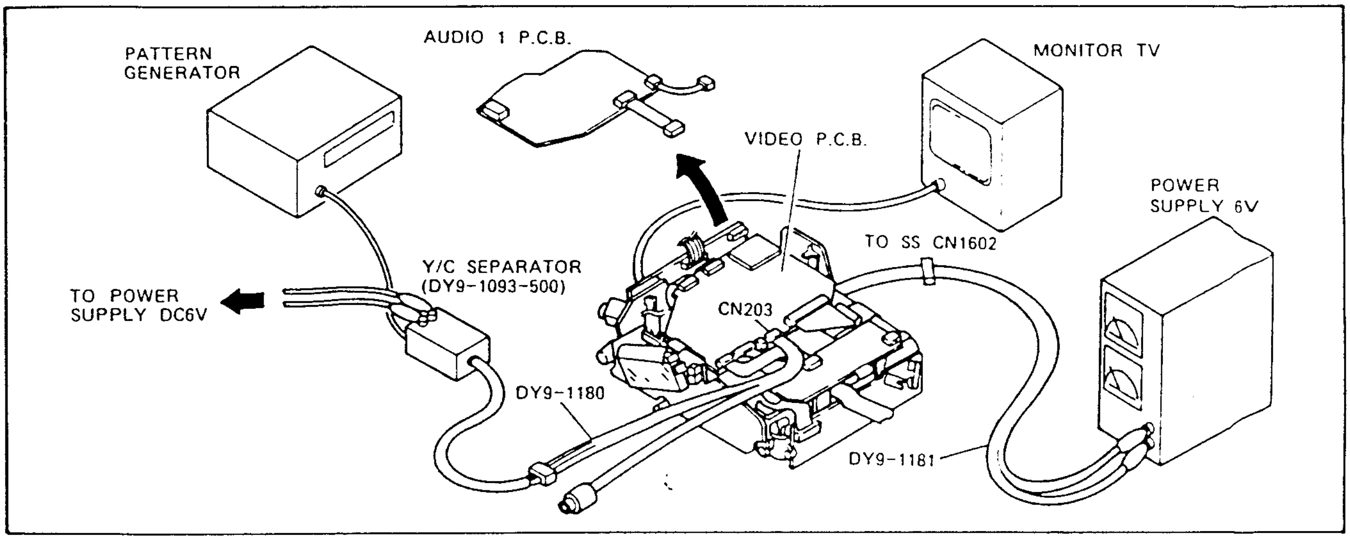

PATTERN GENERATOR
AUDIO 1 P.C.B.
MONITOR TV
VIDEO P.C.B.
POWER SUPPLY 6V
TO SS CN1602
Y/C SEPARATOR (DY9-1093-500)
TO POWER SUPPLY DC6V
CN203
DY9-1180
DY9-1181

Fig. II-8 Setting 1 (for video adjustment)

(3) Setting 2 (for character display of SS adjustment)

1) Connect the EVF-unit to the main unit under setting 1 condition by using the extension cable (DY9-1255).

(Thus character is displayed on monitor TV with a wireless remote controller.)

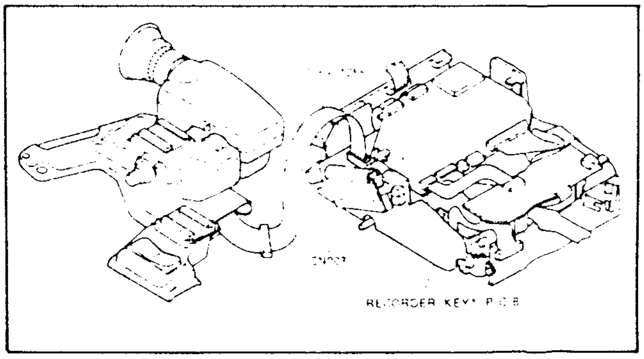

RECORDER KEY P C B

Fig. II-9 Setting 2

(4) Setting 3 (for tape transport • peaking adjustment)

1) Under setting 1 condition (take out of AUDIO P.C.B. and connection of Y/C separator are not necessary), take out PB-RF, Head SW pulse with the extension cable (DY9-1152), and adjust.

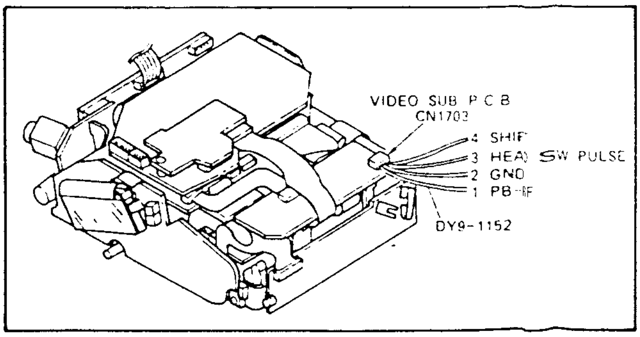

VIDEO SUB P C B
CN1703
4 SHIFT
3 HEAD SW PULSE
2 GND
1 PB-RF
DY9-1152

Fig. II-10 Setting 3

(5) Setting 4 (for adjusting and operational checking of DSP)

1) Set the setting 1 condition. Then, open the VIDEO P.C.B. with the extension cables (DY9-1250, -1270). (Remove the TERMINAL P.C.B. once for connecting the extension cable.)

2) Connect the EVF-unit with the extension cable (DY9-1255).

3) Input SC (subcarrier) from a pattern generator to a pin terminal of extension cable (DY9-1180). At this time, separate the output of pattern generator into two ways, and connect the 75 Ω terminal resist to either of them.

4) Set test mode 4 (DSP mode) by a wireless remote controller.

* Remarks: The DSP operates only when the service mode 4 is set and the SC is input. (Note that, even in the service mode 4, the DSP does not operate without the SC input except in PB mode. Without the SC input, the electric current consumption rises considerably.)

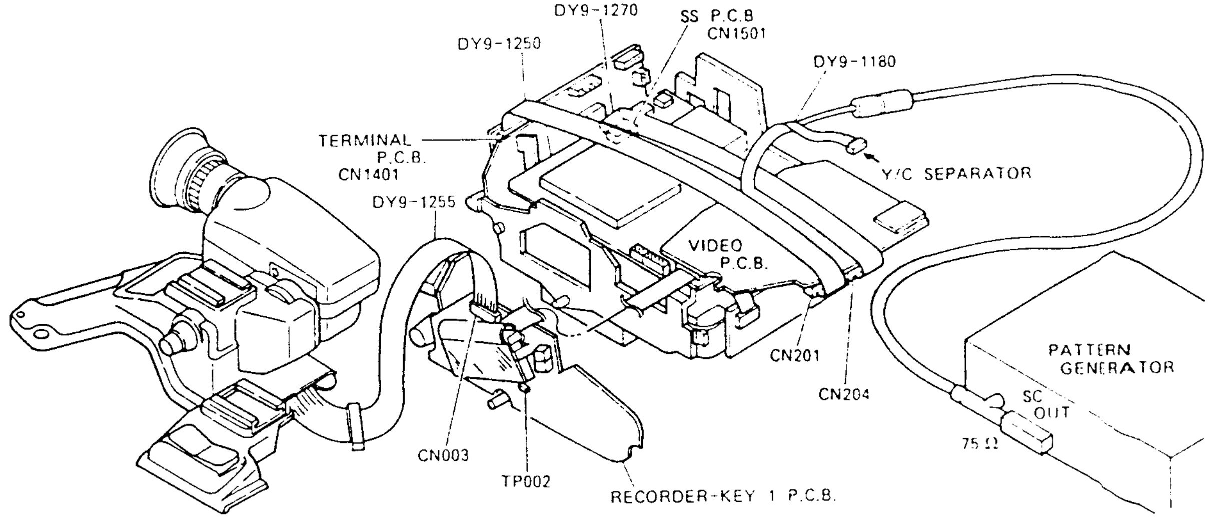

DY9-1270
SS P.C.B
CN1501
DY9-1250
DY9-1180
TERMINAL
P.C.B.
CN1401
Y/C SEPARATOR
DY9-1255
VIDEO
P.C.B.
CN201
CN204
PATTERN
GENERATOR
SC
OUT
75 Ω
CN003
TP002
RECORDER-KEY 1 P.C.B.

Fig. II-11 Setting 4

(6) Setting 5 (for DSP and other operational checkings)

1) By this setting, the camera and recorder units can be adjusted easily with the extension connectors (DY9-1181, -1182, -1253x2, -1290).

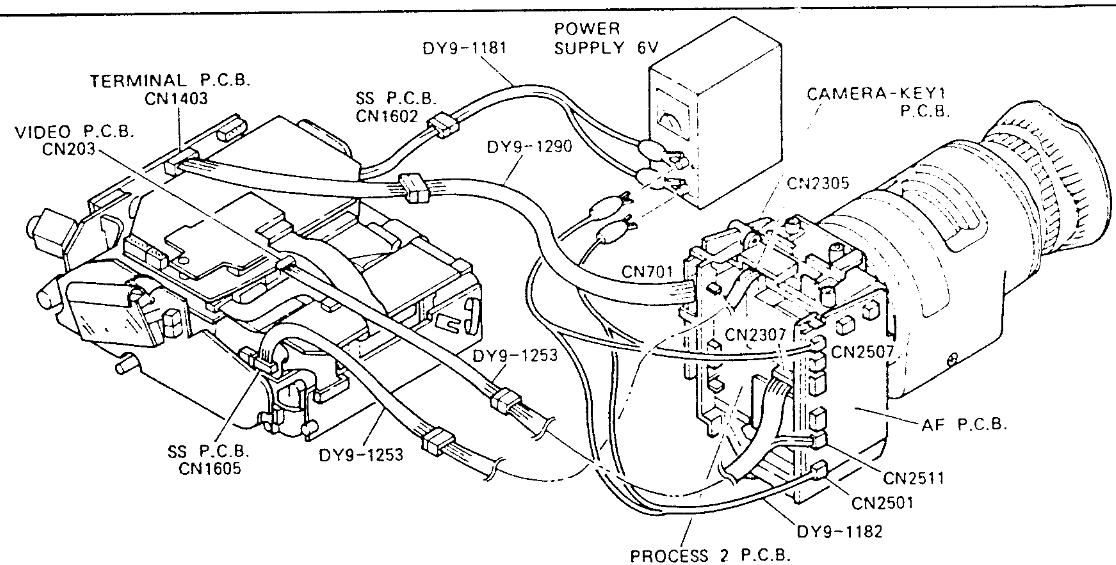

POWER
SUPPLY 6V
DY9-1181
TERMINAL P.C.B.
CN1403
SS P.C.B.
CN1602
CAMERA-KEY1
P.C.B.
VIDEO P.C.B.
CN203
DY9-1290
CN2305
CN701
CN2307
CN2507
DY9-1253
AF P.C.B.
SS P.C.B.
CN1605
DY9-1253
CN2511
CN2501
DY9-1182
PROCESS 2 P.C.B.

Fig. II-12 Setting 5

2-2-2 How to open P.C.B.s of recorder section

(1) Rear side of VIDEO P.C.B.

1) Open the VIDEO P.C.B., by setting the setting 4 condition using the extension cables (DY9-1250, -1270).

(2) Front side of SS P.C.B.

1) To check the DSP, set the setting 4 condition.

2) To check the underneath VIDEO SUB P.C.B., loosen its seating.

(3) Rear side of SS P.C.B.

1) Open the SS P.C.B. using the extension cables (DY9-1147, -1148, -1227, -1228).

At this time, open the RECORDER-KEY 1 and TERMINAL P.C.B.s.

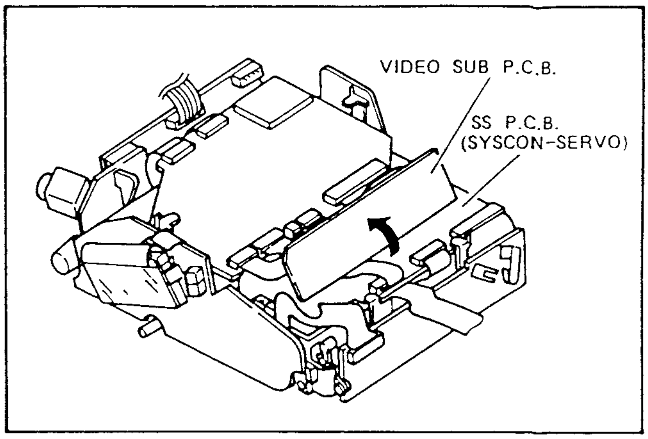

VIDEO SUB P.C.B.
SS P.C.B.
(SYSCON-SERVO)

Fig. II-13

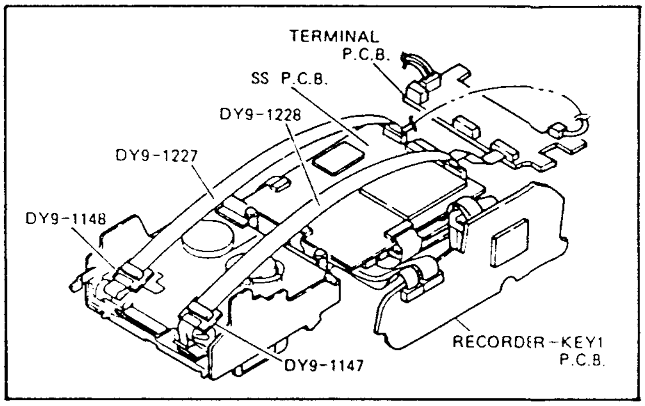

TERMINAL
P.C.B.
SS P.C.B.
DY9-1228
DY9-1227
DY9-1148
DY9-1147
RECORDER-KEY1
P.C.B.

Fig. II-14

2-2-3 Service modes

This model has service mode for adjustments and operation checks. Activate these modes with the recorder and EVF connected for character display.

During the service modes, the following error detections are cancelled:

- ° Drum rotation error
- ° Capstan rotation error
- ° Reel rotation error

(1) Transition to service mode

Each time pattern of wireless remote controller (WL-600) is short-circuited, the mode is transferred. Thus operation can be checked without disassembling the body. The mode transfers in the following sequence:

Normal 1 → 2 → 3 → 4 → 5 → 6 → 7 → 8 → 9 → 10 → 11 → Normal

* The step No. of service mode is indicated in LCD, too.

The CLEAR SW (WL-600) is used in steps 1, 2, 3, 5, 6 and 9.

WL-600 .... DY2-1294-000

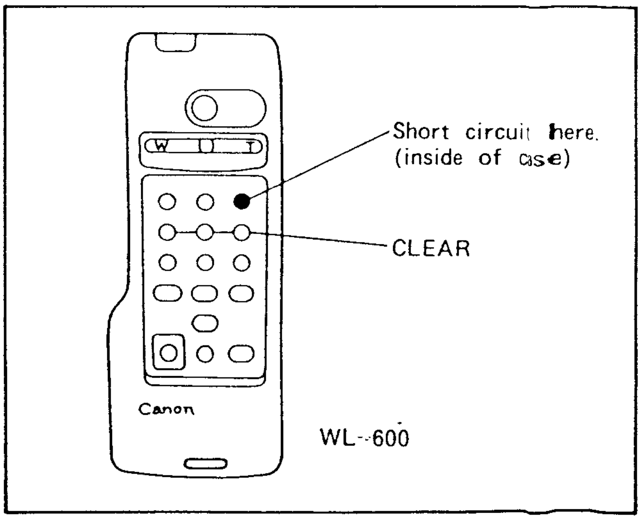

Short circuit here.
(inside of case)
CLEAR
W
T
Canon
WL-600

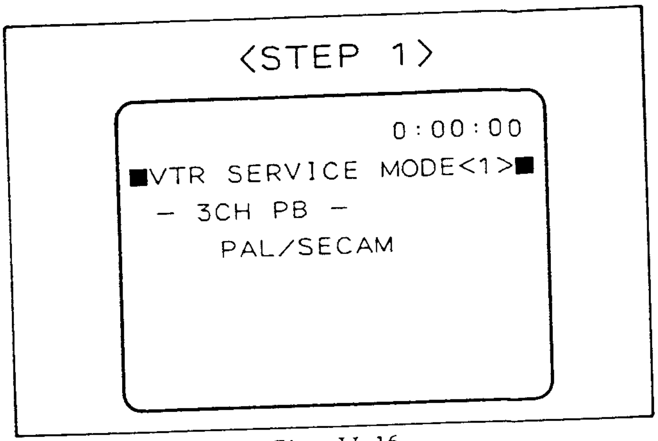
Fig. II-15

(2) Functions of service mode

(Step 1)

Destination setting mode

No use


<STEP 1>

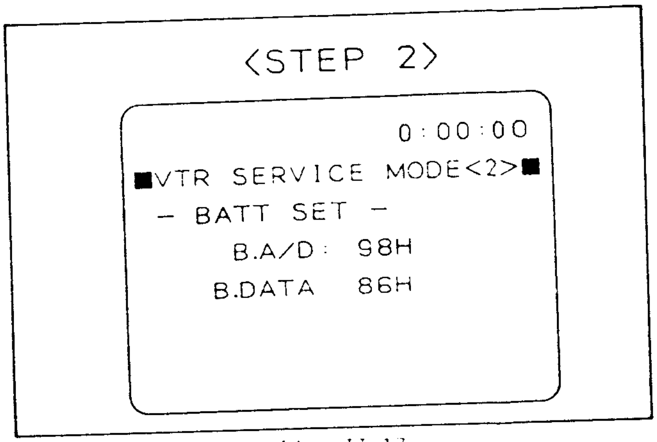
0:00:00
■VTR SERVICE MODE<1>■
– 3CH PB –
PAL/SECAM

Fig. II-16

(Step 2)

Power saving adjustment mode

- B.A/D : Terminal voltage data
- B.DATA: Power saving adjustment data


<STEP 2>

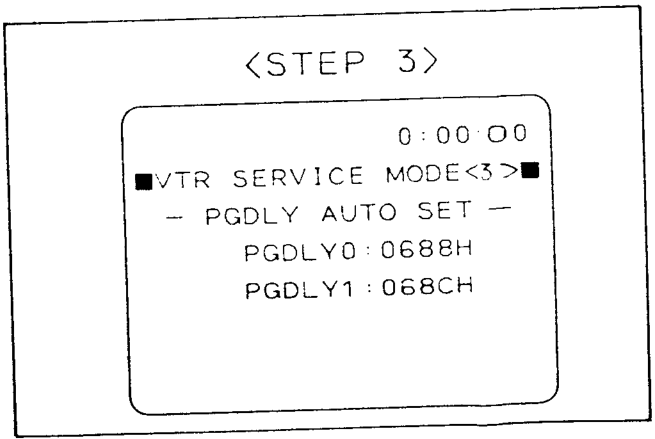
0:00:00
■VTR SERVICE MODE<2>■
– BATT SET –
B.A/D : 98H
B.DATA 86H

Fig. II-17

(Step 3)

Switching point adjustment mode for factory (automatic)

- PGDLY0 } Switching point adjustment data
- PGDLY1 }


<STEP 3>

0:00:00
■VTR SERVICE MODE<3>■
– PGDLY AUTO SET –
PGDLY0 : 0688H
PGDLY1 : 068CH

Fig. II-18

(Step 4)

1) Tape path adjustment mode (for PB operation)

The RF envelope can be checked in a range of 220 degrees by changing the duty ratio of head switching pulse. Each press of the R-KEY2 '+' causes cyclic state transition as shown below.

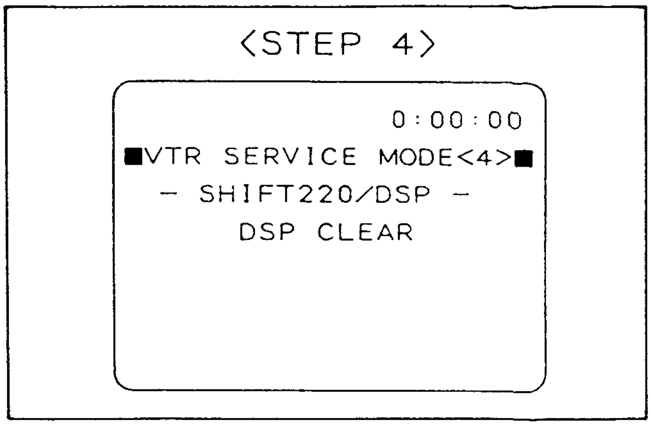
→ 180/ON → 220/SHIFT → 220/ON

- 180/ON ...... Normal state
- 220/SHIFT ... Under 25%-track-shift condition, the RF envelope of 220 degrees is output.
- 220/ON ...... Under on-track condition, the RF envelope of 220 degrees is output.

2) DSP check mode (for EE operation)

Each press of the D.E.SELECT key on the TERMINAL P.C.B. causes cyclic state transition as shown below.

→ DSP CLEAR → FREEZE → DSP CLEAR → TELE



```
<STEP 4>

                 0:00:00
■VTR SERVICE MODE<4>■
  - SHIFT220/DSP -
      DSP CLEAR
```

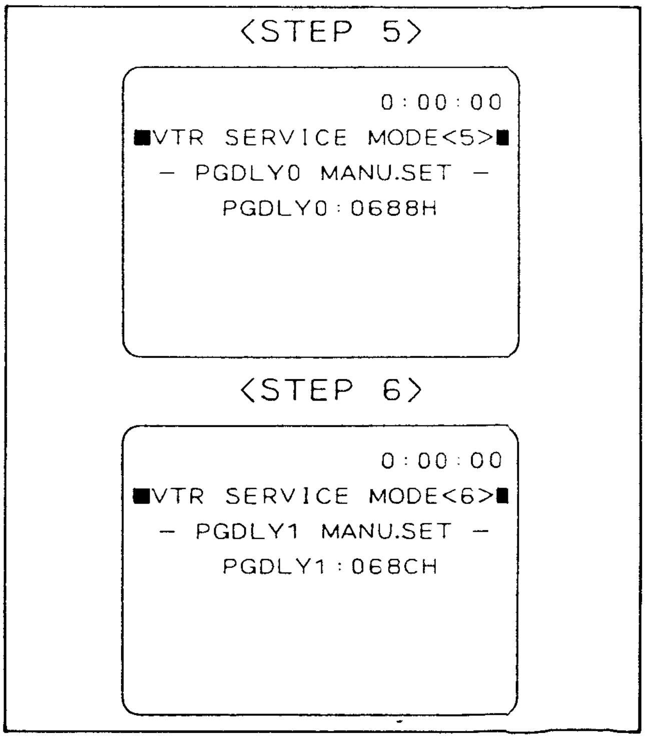
Fig. II-19

(Steps 5 and 6)

Switching point adjustment mode (manual)
Play back the alignment tape (Tracking B with marker) DY9-1086-001. And, adjust the position of switching pulse by pressing the R-KEY2 '+/-'.
To write data, press the DSP CLEAR button.

(On completion of writing, 'WR!' is indicated at the end of data.)

- The step 5 is the adjustment for the fall of switching point.
- The step 6 is the adjustment for the rise of switching point.



```
<STEP 5>

                 0:00:00
■VTR SERVICE MODE<5>■
  - PGDLY0 MANU.SET -
     PGDLY0:0688H

<STEP 6>

                 0:00:00
■VTR SERVICE MODE<6>■
  - PGDLY1 MANU.SET -
     PGDLY1:068CH
```

Fig. II-20

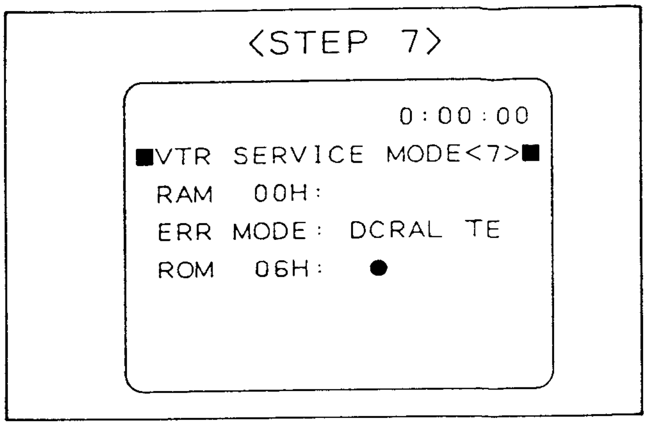
(Step 7)

Error indication mode

D .... Drum
C .... Capstan
R .... Reel
A .... Recording amplifier
L .... Loading
T .... Top of tape
E .... End of tape

In case that any error took place, 'o' is indicated below the relevant error code. Also, the mode in which the error occurred is indicated as ROM data.
(On the screen shown at right, it is indicated that the capstan error took place in the playback mode.)

° Mode codes: 03H: FF 04H: REC 06H: PB
07H: STILL(+)
14H: REC PAUSE 31H: EJECT
46H: CUE 56H: REV
83H: REW 97H: STILL(-)



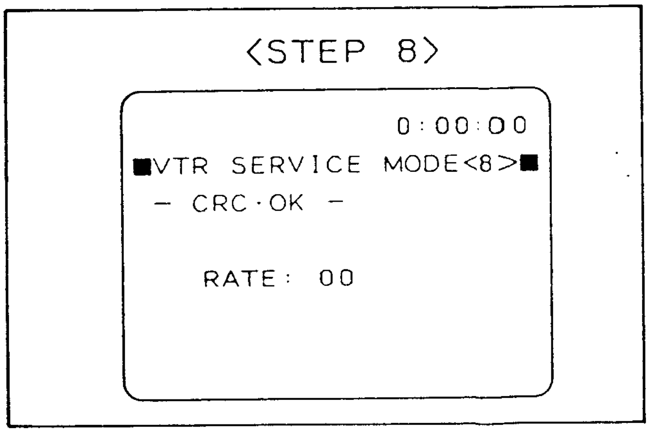
```
<STEP 7>

                0:00:00
■VTR SERVICE MODE<7>■
 RAM   00H:
 ERR MODE:  DCRAL TE
 ROM   06H:    ●
```

Fig. II-21

(Step 8)

Video marker data/error rate display mode
The time code/data code error rate is indicated.

(The error rate during the last 100 V interval period is reported in any case.)



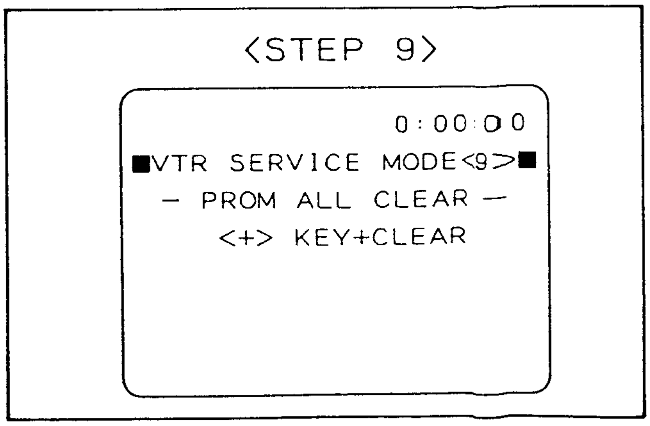
```
<STEP 8>

                0:00:00
■VTR SERVICE MODE<8>■
 - CRC·OK -

    RATE: 00
```

Fig. II-22

(Step 9)

All-clear mode
In this mode, all the contents of E^{2}PROM (IC1603) are cleared (data resetting to FF). Such data as destination, power saving adjustment, switching point, slow tracking, etc. can be initialized.

Press the DSP CLEAR button of wireless controller while holding down the R-KEY2 '+'. Thus, 'ALL CLEAR' in indicated on screen. Then, all the data of E^{2}PROM can be cleared when power is turned off.

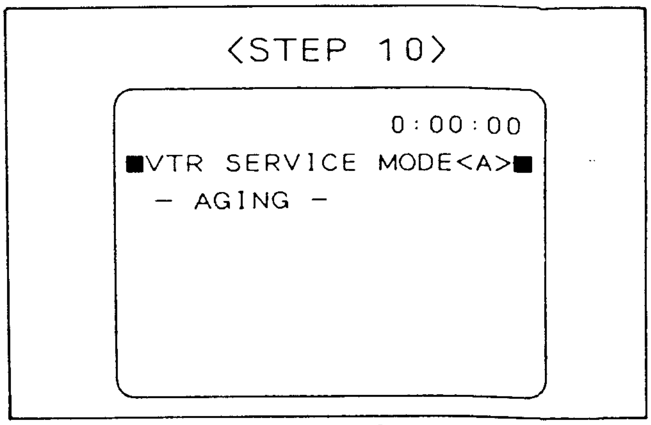


```
<STEP 9>

                0:00:00
■VTR SERVICE MODE<9>■
  - PROM ALL CLEAR -
     <+> KEY+CLEAR
```

Fig. II-23

(Step 10)

Aging mode
Used for inspection at factory.

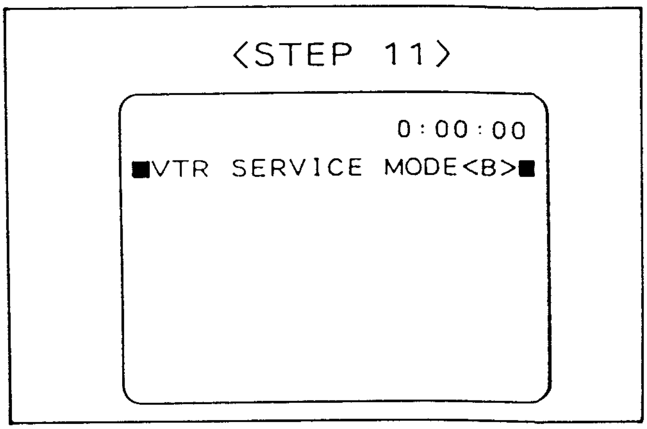

<STEP 10>

0:00:00
■VTR SERVICE MODE<A>■
– AGING –

Fig. II-24

(Step 11)

All-LCDs turn-on mode


<STEP 11>

0:00:00
■VTR SERVICE MODE<B>■

Fig. II-25

3. Adjustment After Replacement

The following table shows the minimal adjustments required after the parts replacement.

3-1 Camera section

Table II-3

No.	Adjustments	Replaced parts CCD	 PROCESS 1 P.C.B.	 PROCESS 2 P.C.B.	 ENCODER P.C.B.	 MATRIX P.C.B.	 AF P.C.B.	 AF MI-COM (IC2503)
5-1	Clock frequency adjustment		●					
5-2	PLL adjustment		●					
5-3	24-gate positioning adjustment		●					
5-4	V SUB adjustment	●	●	●				
5-5	V RGL adjustment	●	●	●				
5-6	Auto iris adjustment	●	●	●				
5-7	Y AGC adjustment	●	●	●				
5-8	Y LEVEL adjustment	●	●	●	●	●		
5-9	C2H LEVEL adjustement	●	●	●	●	●		
5-10	C LEVEL adjustment	●	●	●	●	●		
5-11	Carrier balance adjustment	●	●	●	●	●		
5-12	R/B gain adjustment	●	●	●	●	●		
5-13	Color balance adjustment	●	●	●	●	●		
5-14	FAWB adjustment	●	●	●	●	●		
4-1	Flange back adjustment	●	●					
4-2	AF adjustment	●		●			●	●

3-2 Recorder section

Table II-4

No.	Adjustments	Replaced parts Drum unit	 HEAD AMP ASS'Y.	 VIDEO P.C.B.	 AUDIO (1), (2) P.C.B.	 JOG P.C.B.	 SS P.C.B.	 SERVO MI-COM.(IC101)
6-1	SS 5V adjustment						●	●
6-2	Undercut adjustment						●	●
6-3	Switching point adjustment	●					●	●
6-4	DSP Y OUT adjustment						●	
6-5	DSP C OUT adjustment						●	
6-6	VCO adjustment						●	
6-7	VIDEO AGC adjustment			●				
6-8	Comb filter adjustment			●				
6-9	VIDEO level adjustment			●				
6-10	Chrominance emphasis adjustment			●				
6-11	Y FM carrier adjustment			●				
6-12	Y FM deviation adjustment			●				
6-13	Y FM carrier (Hi8) adjustment			●				
6-14	Y FM deviation (Hi8) adjustment			●				
6-15	PB Y level (1) adjustment	●		●				
6-16	PB Y level (2) adjustment	●		●				
6-17	Character position of character generator adjustment			●				
6-18	JOG chrominance phase adjustment					●		
6-19	Peaking adjustment	●	●					
6-20	Recording current adjustment	●	●	●	●	●		

4. Trouble Shooting Guide

Before start trouble shooting, prepare following settings.

(1) Connect a constant power supply to the battery terminal, and monitor the current for preventing a short circuit.

Setting voltage: 6.5V

Setting current: 2.5A max.

Current rate :

	Power on (without tape)	REC	Play	FF/REC
With lens	1.3A	1.4A	1.1A	1.6A (It increases 2.0A a moment)
Without lens	1.2A	1.3A	1.1A	1.5A (It increases 1.9A a moment)

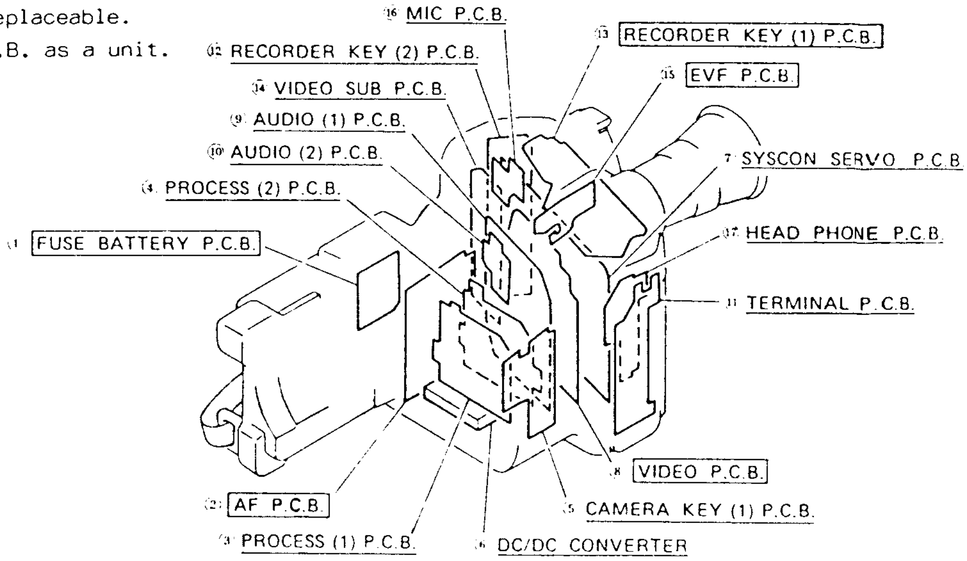
(2) Modified wireless remote controller for setting the service mode. (Refer to Page II-7.)

(3) Blank tape, pre-recorded tape

Location of P.C.B.

☐ : Each elements (Diodes, transistors, ICs, etc.) are replaceable.

——— : Replace each P.C.B. as a unit.


⑯ MIC P.C.B.
⑫ RECORDER KEY (2) P.C.B.
⑭ VIDEO SUB P.C.B.
⑨ AUDIO (1) P.C.B.
⑩ AUDIO (2) P.C.B.
④ PROCESS (2) P.C.B.
① FUSE BATTERY P.C.B.
⑬ RECORDER KEY (1) P.C.B.
⑮ EVF P.C.B.
⑦ SYSCON SERVO P.C.B
⑰ HEAD PHONE P.C.B.
⑪ TERMINAL P.C.B.
⑧ VIDEO P.C.B.
② AF P.C.B.
③ PROCESS (1) P.C.B.
⑤ CAMERA KEY (1) P.C.B.
⑥ DC/DC CONVERTER

① FUSE BATTERY (Symbol 12xx)
Supplies power from the battery terminal to circuit boards. Fuses are provided.

② AF (Symbol 25xx)
AF processing circuitry and PIEZO drive circuitry are provided.

③, ④ PROCESS (1), (2) (Symbol 21xx ∿ 24xx)
All CCD drive circuitry and camera signal processing circuitry are provided.

⑤ CAMERA KEY (1) (Symbol 7xx)
Camera key circuit

⑥ DC/DC converter
DC/DC converter block

⑦ SYSCON SERVO (Symbol 1xx, 15xx ∿ 17xx)
- ° Servo control circuit including servo micro-processor.
- ° System control circuit including main micro-processor.
- ° Digital signal processing circuit

⑧ VIDEO (Symbol 2xx ∿ 4xx)
Video signal processing (recording and playback)

⑨, ⑩ AUDIO 1, 2 (Symbol 8xx)
Stereo audio signal processing circuit

⑪ TERMINAL (Symbol 14xx)
VIDEO, AUDIO and S-VIDEO terminals

⑫ RECORDER KEY (2) (Symbol 19xx)
- ° Recorder keys
- ° Lithium battery terminal

⑬ RECORDER KEY (1) (Symbol 00x ∿ 04x)
- ° Recorder keys include key micro-processor
- ° LCD display

⑭ VIDEO SUB (Symbol 17xx)
- ° Sub video process circuit

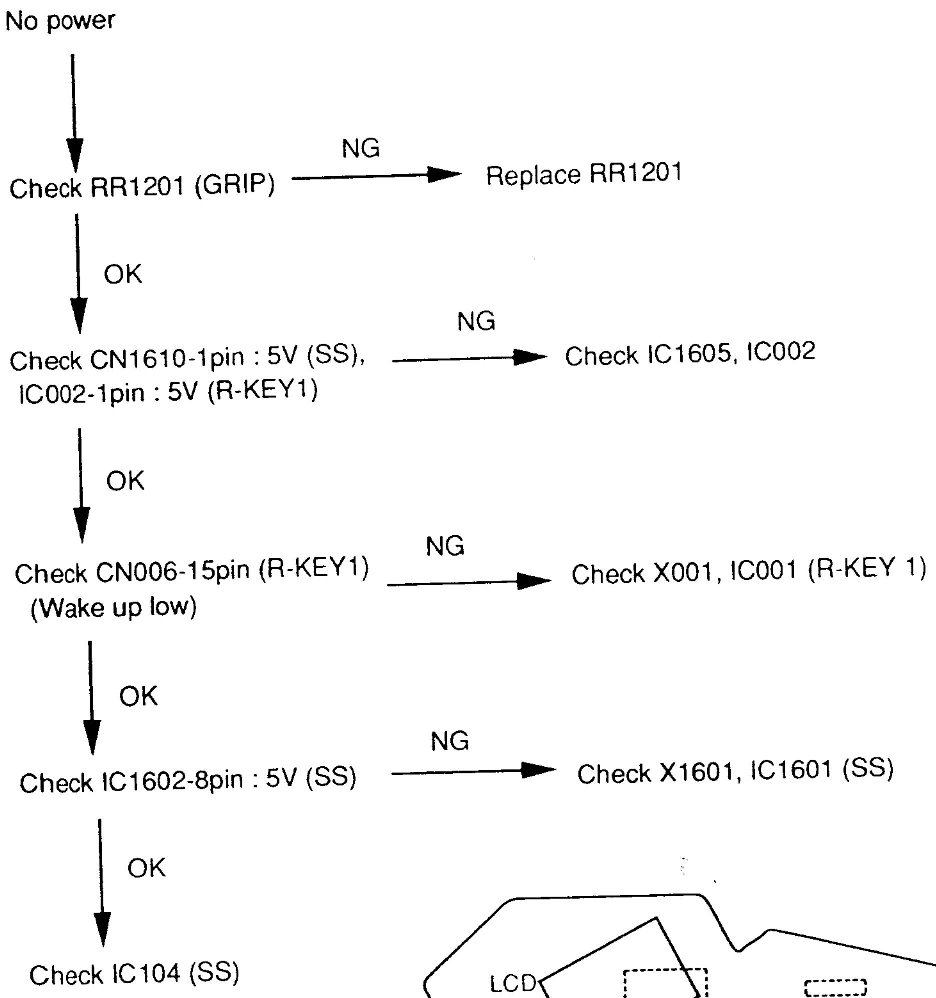
⑮ EVF (Symbol 29xx)
- ° EVF drive circuit
- ° HD and VD are supplied as synchronizing signals to the character generator circuit
- ° Remote control receiver is provided.

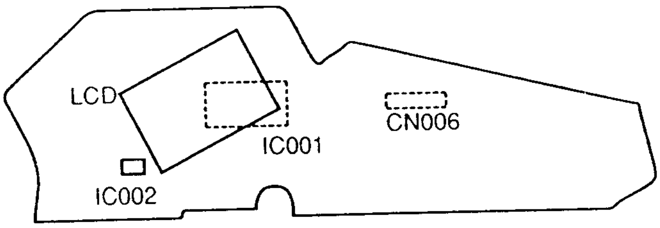
⑯ MIC (Symbol 13xx)
Stereo mic jack and level control volume

⑰ HEADPHONE (Symbol 05x ∿ 06x)
Headphone jack and headphone volume

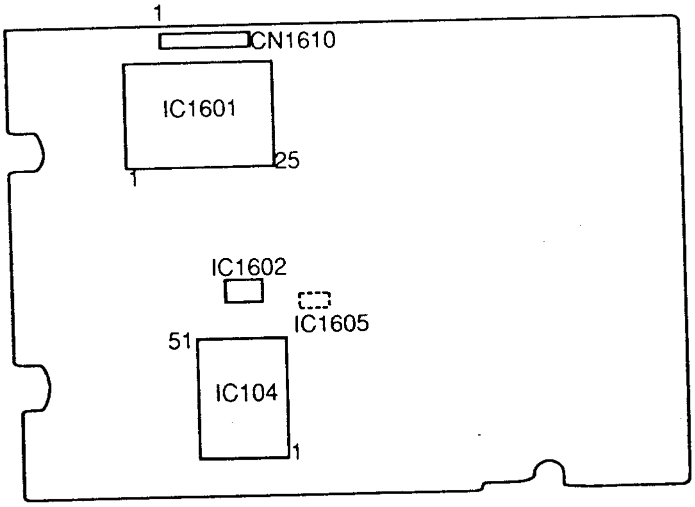
Fig. II-26

4-1. Power trouble


No power
Check RR1201 (GRIP)
NG
Replace RR1201
OK
Check CN1610-1pin : 5V (SS),
IC002-1pin : 5V (R-KEY1)
NG
Check IC1605, IC002
OK
Check CN006-15pin (R-KEY1)
(Wake up low)
NG
Check X001, IC001 (R-KEY 1)
OK
Check IC1602-8pin : 5V (SS)
NG
Check X1601, IC1601 (SS)
OK
Check IC104 (SS)


LCD
IC001
CN006
IC002

R-KEY 1 PCB


1
CN1610
IC1601
25
1
IC1602
IC1605
51
IC104
1

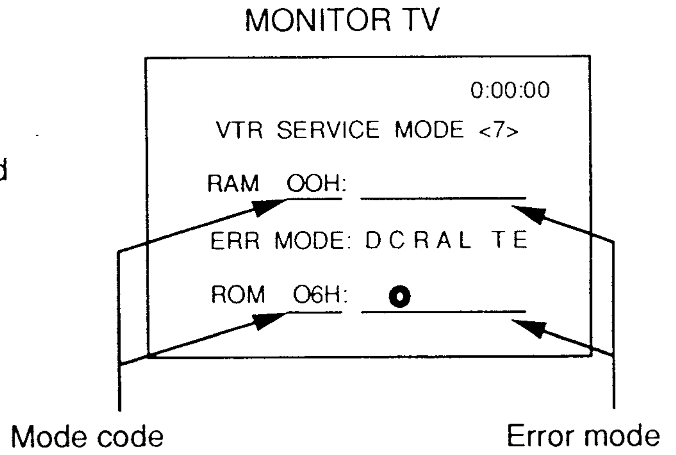
SS PCB

4-2. Error trouble ("EJECT" flashing)

Set service mode <7> and observe a display code.

RAM : Current error detected

ROM : Latest error detected



```
0:00:00
VTR SERVICE MODE <7>
RAM  OOH: ________
ERR MODE: D C R A L  T E
ROM  O6H:  ●
```

Display "●" at error detected

(Ex. Latest error detected at Capstan motor in PB mode.)

Mode code

02 : STOP
03 : FF
04 : REC
06 : PB
07 : STILL (+)
14 : REC/PAUSE
31 : EJECT (unloading)
46 : CUE
56 : REV
83 : REW
97 : STILL (-)

Error mode

D : Drum error
C : Capstan error
R : Reel error
A : Rec amp.
L : Loading error
T : Tape top
E : Tape end

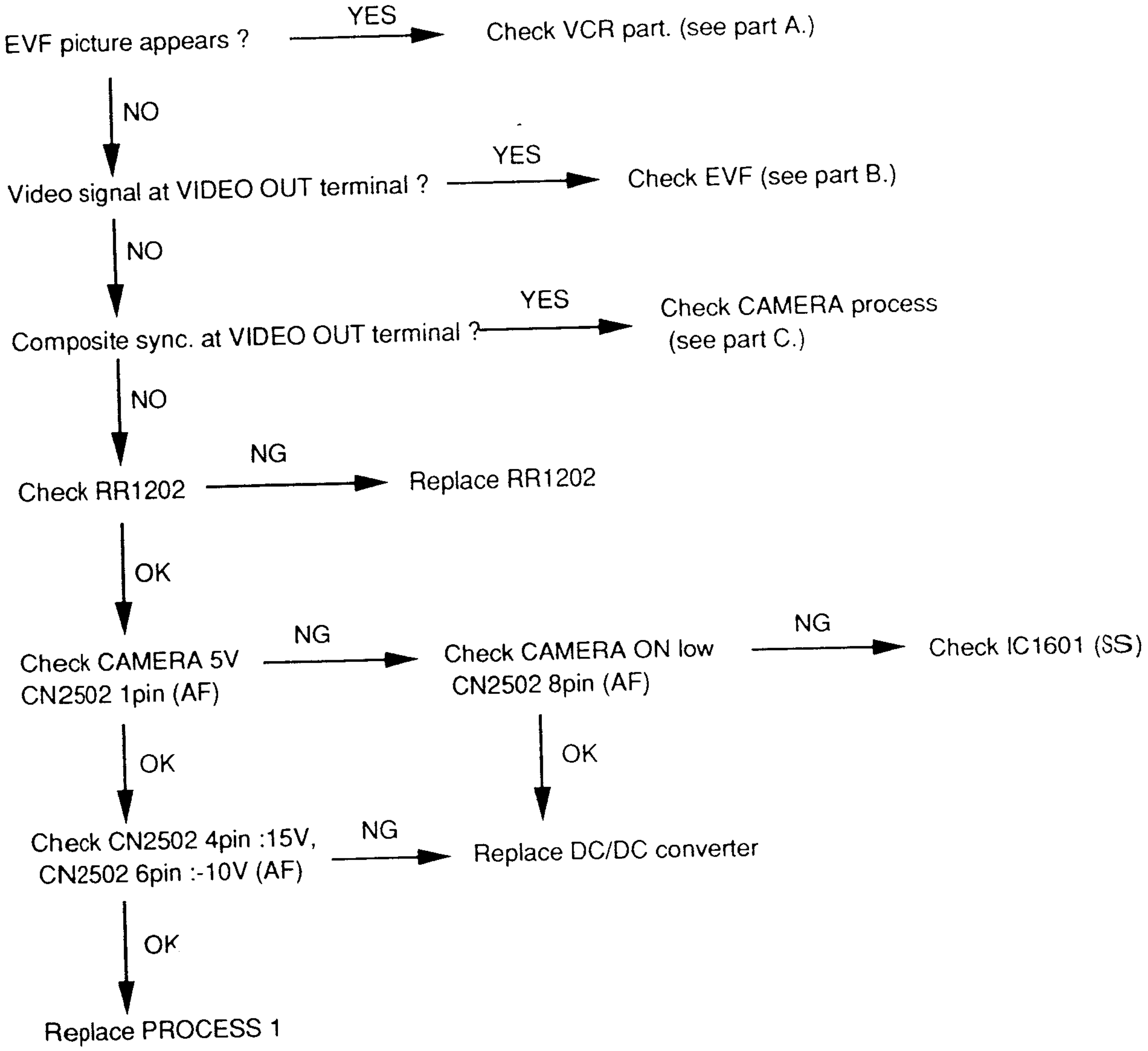
Notes : Error code on ROM data is memorized by EEPROM even power off.

If the errors above listed appear, check the related parts as follows.

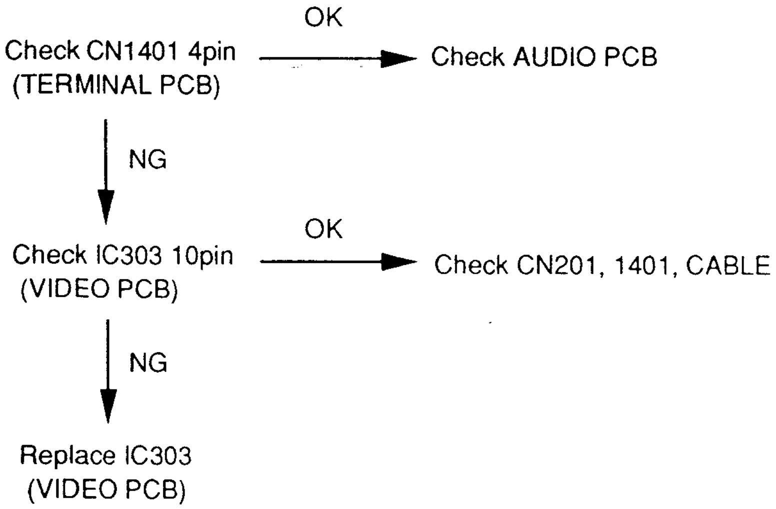
Reel error : Check reel FG sensor, reel table etc.
Tape top, end : Check tape end sensor,sensor LED.
Rec amp. : Check Head amp.
Loading error : Check loading motor, MECH. alignment.
Capstan error : Check capstan motor, motor driver (IC100) etc.
Drum error : Check drum motor, motor driver (IC101) etc.

4-3. VIDEO trouble

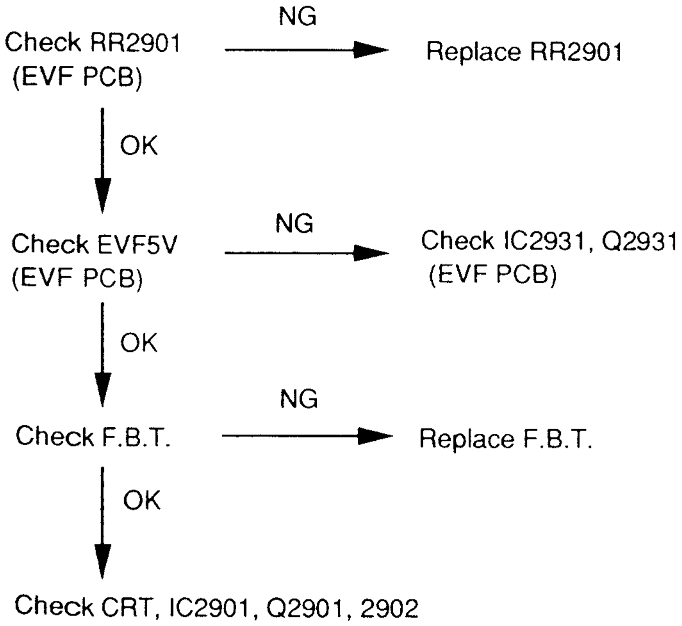
No EE picture


EVF picture appears ?
YES
Check VCR part. (see part A.)
NO
Video signal at VIDEO OUT terminal ?
YES
Check EVF (see part B.)
NO
Composite sync. at VIDEO OUT terminal ?
YES
Check CAMERA process (see part C.)
NO
Check RR1202
NG
Replace RR1202
OK
Check CAMERA 5V CN2502 1pin (AF)
NG
Check CAMERA ON low CN2502 8pin (AF)
NG
Check IC1601 (SS)
OK
OK
Check CN2502 4pin :15V, CN2502 6pin :-10V (AF)
NG
Replace DC/DC converter
OK
Replace PROCESS 1

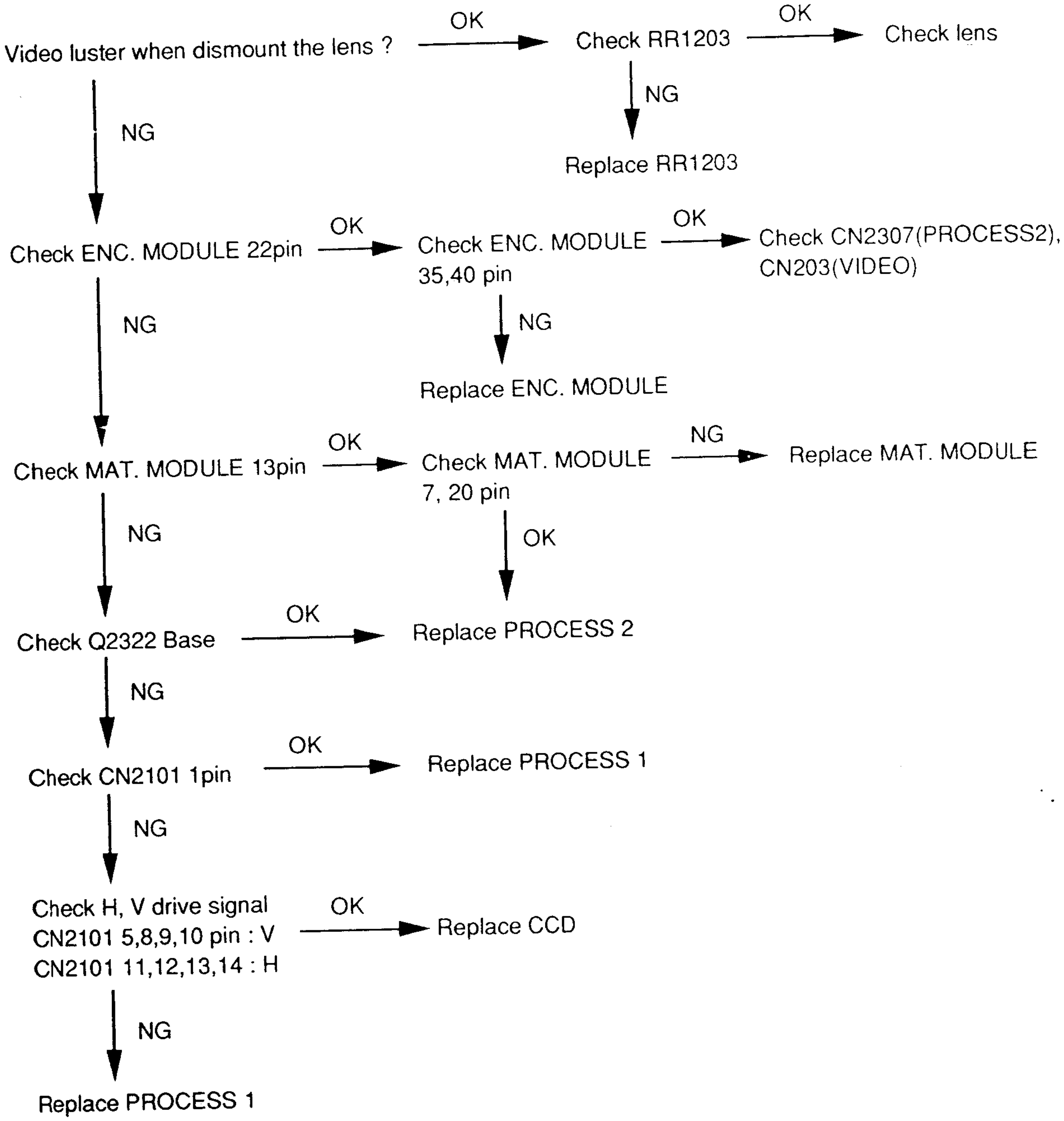
Part A.


Check CN1401 4pin
(TERMINAL PCB)
OK
Check AUDIO PCB
NG
Check IC303 10pin
(VIDEO PCB)
OK
Check CN201, 1401, CABLE
NG
Replace IC303
(VIDEO PCB)

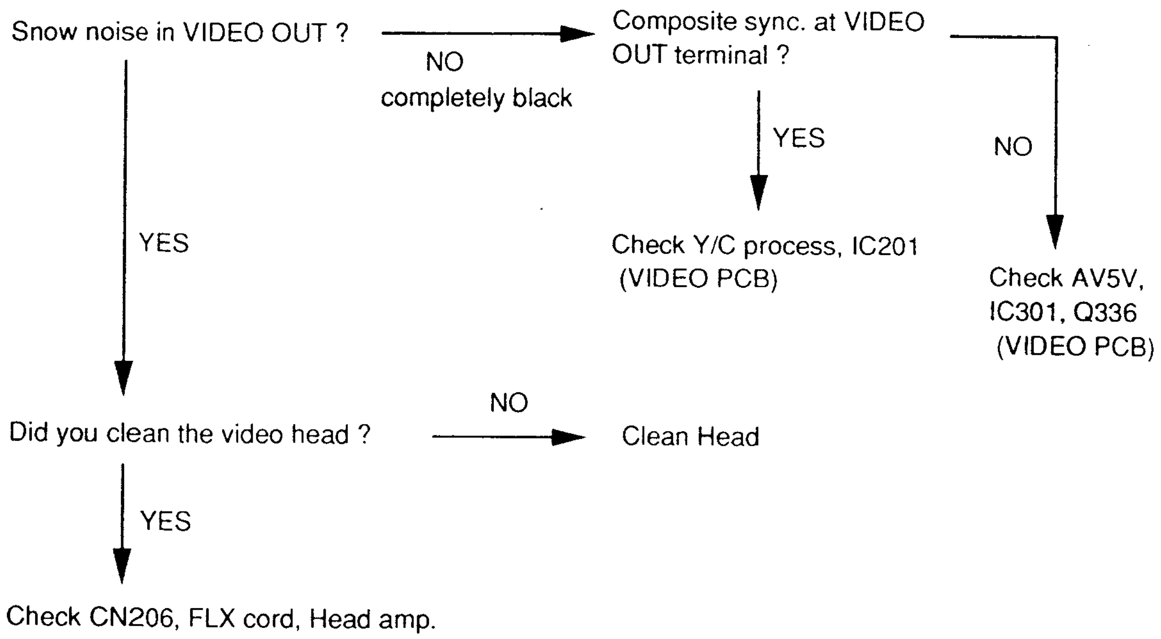
Part B.


Check RR2901
(EVF PCB)
NG
Replace RR2901
OK
Check EVF5V
(EVF PCB)
NG
Check IC2931, Q2931
(EVF PCB)
OK
Check F.B.T.
NG
Replace F.B.T.
OK
Check CRT, IC2901, Q2901, 2902

Part C.

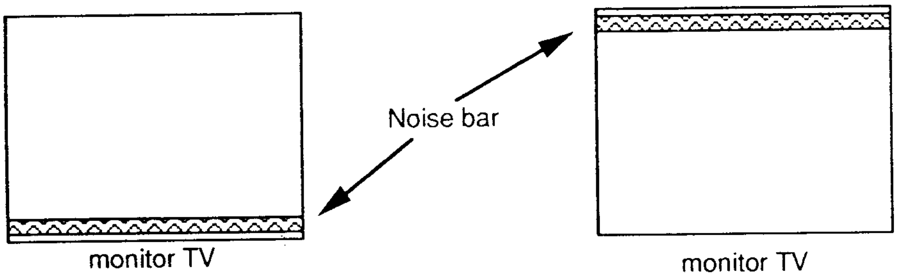

Video luster when dismount the lens ?
OK
Check RR1203
OK
Check lens
NG
Replace RR1203
NG
Check ENC. MODULE 22pin
OK
Check ENC. MODULE 35,40 pin
OK
Check CN2307(PROCESS2), CN203(VIDEO)
NG
Replace ENC. MODULE
NG
Check MAT. MODULE 13pin
OK
Check MAT. MODULE 7, 20 pin
NG
Replace MAT. MODULE
OK
NG
Check Q2322 Base
OK
Replace PROCESS 2
NG
Check CN2101 1pin
OK
Replace PROCESS 1
NG
Check H, V drive signal
CN2101 5,8,9,10 pin : V
CN2101 11,12,13,14 : H
OK
Replace CCD
NG
Replace PROCESS 1

No Video (VV)

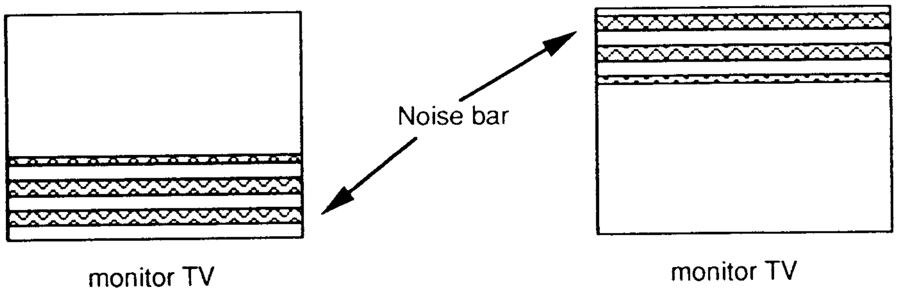

Snow noise in VIDEO OUT ?
NO
completely black
Composite sync. at VIDEO OUT terminal ?
YES
NO
Check Y/C process, IC201 (VIDEO PCB)
Check AV5V, IC301, Q336 (VIDEO PCB)
YES
Did you clean the video head ?
NO
Clean Head
YES
Check CN206, FLX cord, Head amp.

Noise bar on P.B. Video

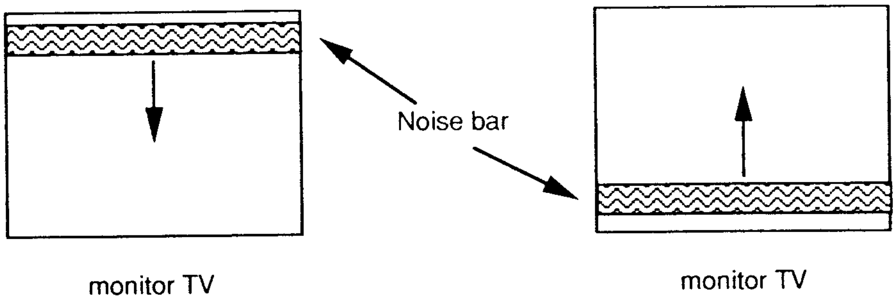
1. Noise-bar appear on top or bottom of picture, or V jittering


Noise bar
monitor TV
monitor TV

2. A few noise-bar appear on top or bottom of screen


Noise bar
monitor TV
monitor TV

3. Noise bar rolling from top to bottom or bottom to top

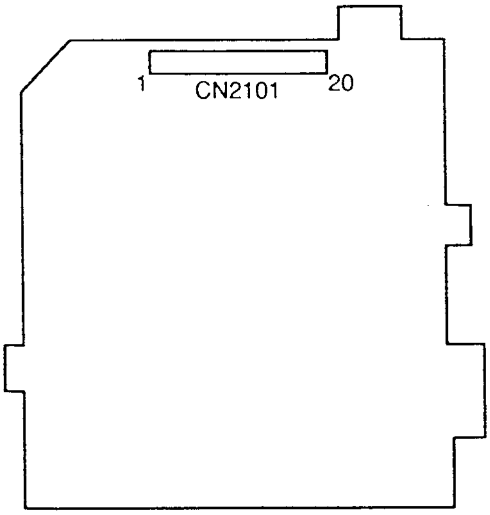

Noise bar
monitor TV
monitor TV

Case 1 : Check tape path (TG-3, TG-6), switching point

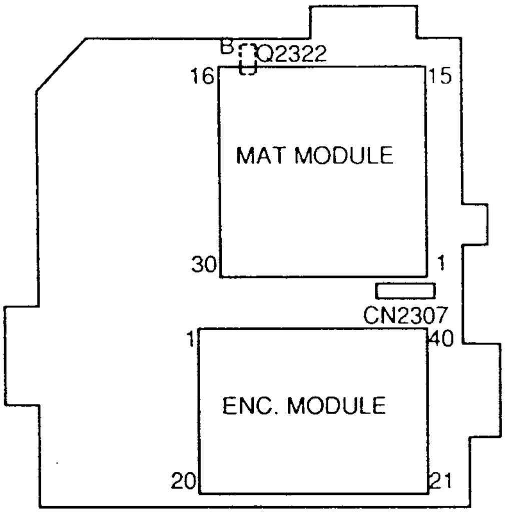
Case 2.: Check Tape path, check loading mech.

Case 3 : Check ATF, check capstan motor.

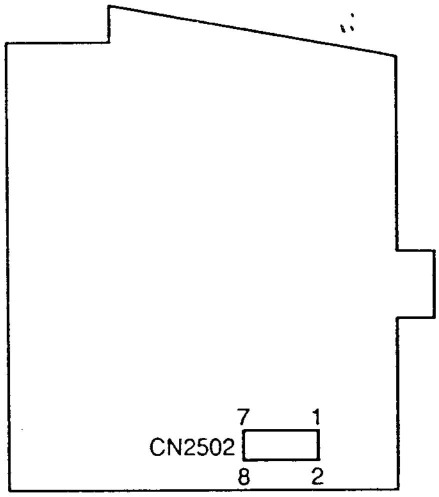
4-4. Diagram of check point



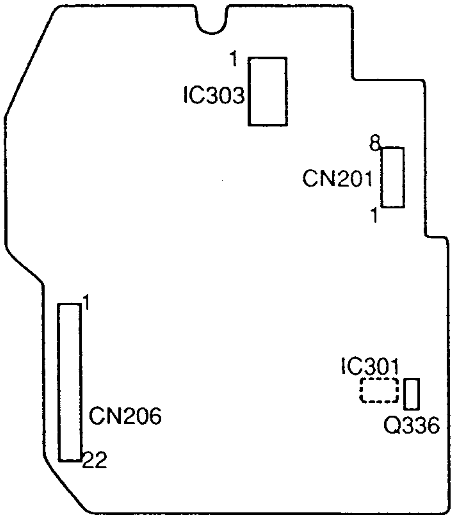
PROCESS 1 PCB


B
Q2322
16
15
MAT MODULE
30
1
CN2307
1
40
ENC. MODULE
20
21

PROCESS 2 PCB


7
1
CN2502
8
2

AF PCB


1
IC303
8
CN201
1
1
IC301
CN206
Q336
22

VIDEO PCB

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1. Disassembling

1-1 Disassembling of covers

1-1-1 Removal of finder, and cassette cover

(1) Dismount the finder.
(2) Remove two cassette cover seals.
(3) Remove two screws ⓐ.
(4) Remove the cassette cover.

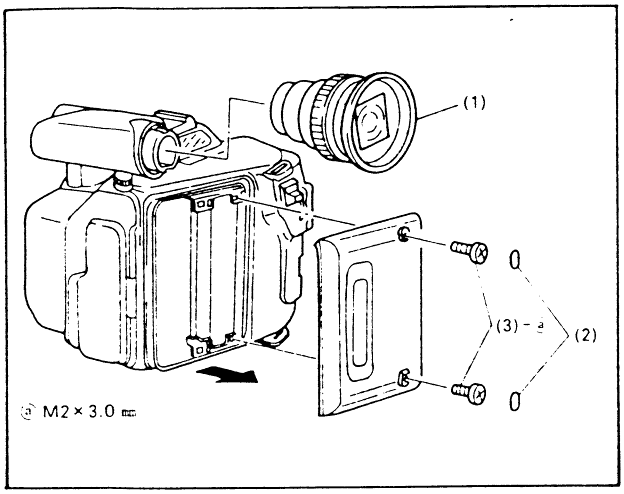

(1)
(3) - a
(2)
a M2 × 3.0 mm

Fig. III-1

1-1-2 Removal of front and grip rear covers

(1) Remove two screws ⓐ and four screws ⓑ.
(2) Remove the front cover.
(3) Remove four screws ⓑ and one screw ⓒ.
(4) Remove the grip rear cover.

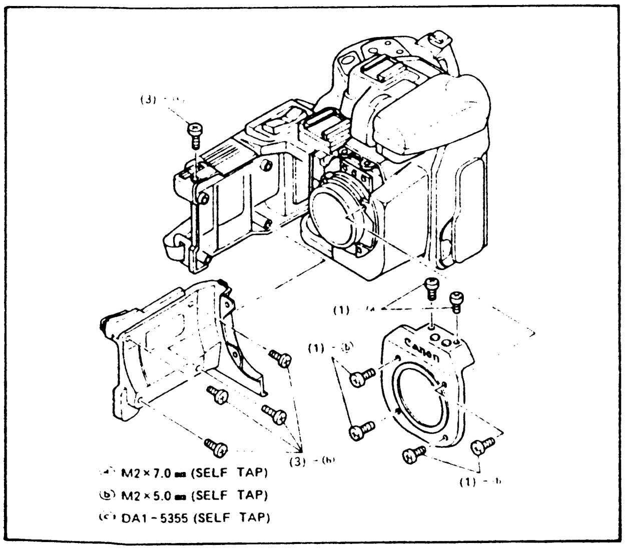

(3) - c
(1) - a
(1) - b
(3) - b
(1) - b
a M2 × 7.0 mm (SELF TAP)
b M2 × 5.0 mm (SELF TAP)
c DA1 - 5355 (SELF TAP)

Fig. III-2

1-1-3 Removal of upper cover

(1) Remove four screws ⓐ and two screws ⓑ.
(2) While picking up the upper cover, unplug the CNs 003, 901, 1303 and 2506.
(3) Dismount the upper cover.

* Note: For reassembling, check the wiring referring to the Figs. III-21 and 22.

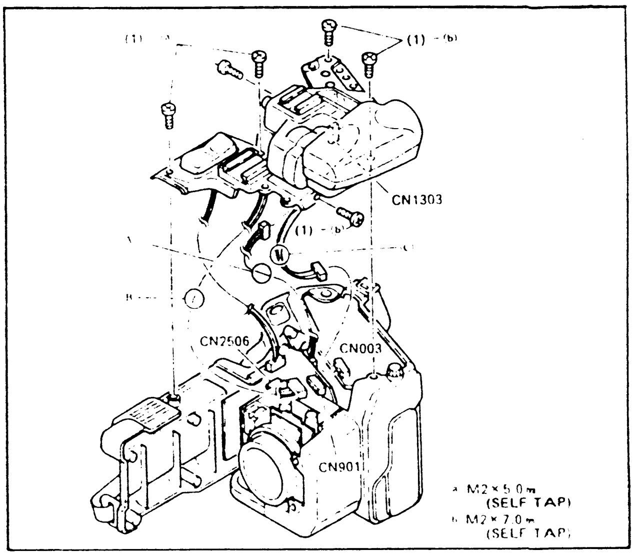

(1) - a
(1) - b
CN1303
(1) - b
CN2506
CN003
CN901
a M2 × 5.0 mm (SELF TAP)
b M2 × 7.0 mm (SELF TAP)

Fig. III-3

1-1-4 Removal of left cover

(1) Unclaw Ⓐ by removing three screws ⓐ.
(2) Unplug the CN003 and 004.
(3) Unplug the CN1201, CN2501 and CN2507.
(4) Dismount the left cover.

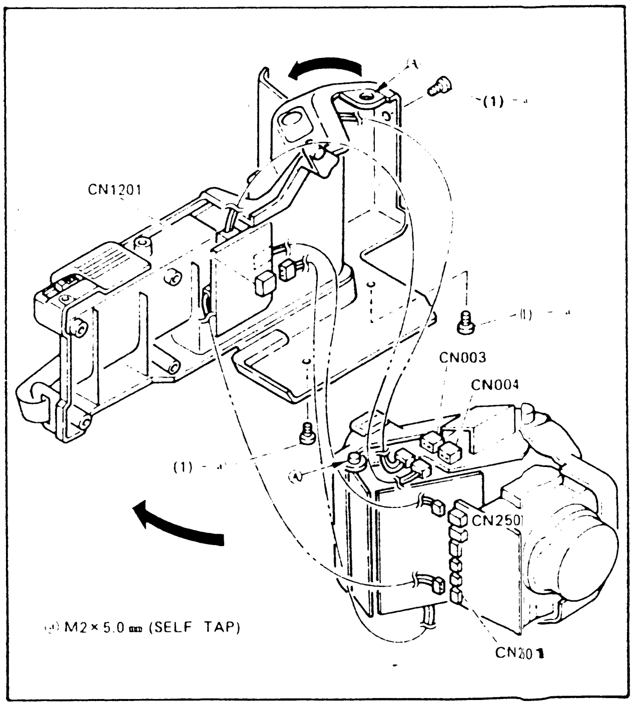

A
(1) - a
CN1201
(1) - a
CN003
CN004
(1) - a
A
CN2501
a M2 × 5.0 mm (SELF TAP)
CN2501

Fig. III-4

1-1-5 Separation of camera and recorder units

(1) Remove a screw ⓐ.
(2) Detach the camera unit.
(3) Unplug the CNs 203, 902, 1605, 2505 and 2701.

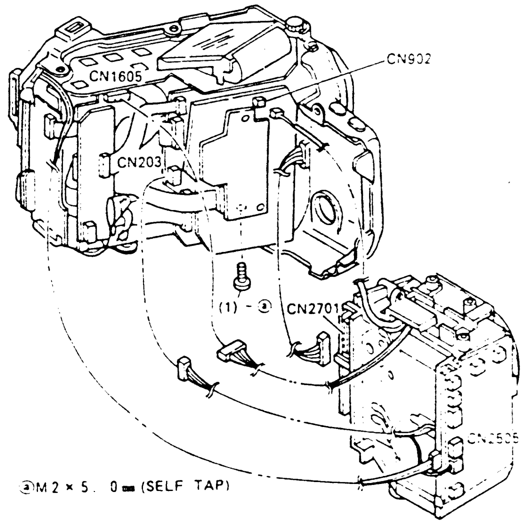

CN902
CN1605
CN203
(1) - ⓐ
CN2701
CN2505
ⓐM2 × 5.0mm (SELF TAP)

Fig. III-5

1-1-6 Removal of rear cover

(1) Remove three screws ⓐ.
(2) Release Ⓐ.
(3) Release Ⓑ (four points).
Then, remove the rear cover.

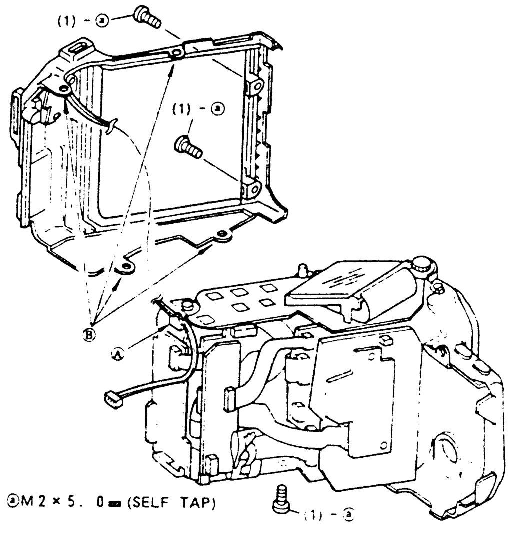

(1) - ⓐ
(1) - ⓐ
Ⓑ
Ⓐ
ⓐM2 × 5.0mm (SELF TAP)
(1) - ⓐ

Fig. III-6

1-1-7 Removal of right cover

(1) Open the jack cover, and remove the screw ⓐ.
(2) Remove the eject knob.
(3) Remove the right cover by unclawing the Ⓑ.

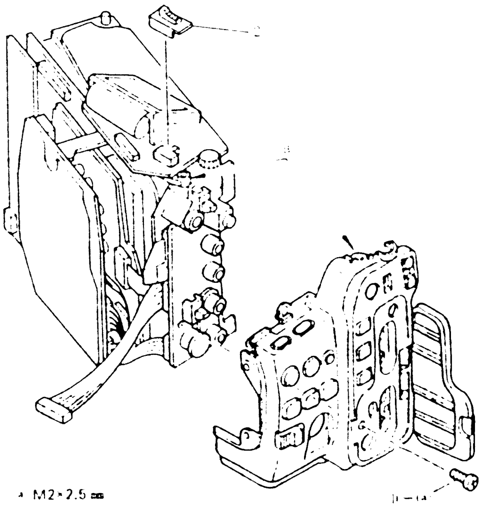


Fig. III-7

1-1-8 Separation of upper cover and EVF unit

(1) Remove two screws ⓐ and one screw Ⓑ.
(2) Separate the upper cover from the EVF section.
(3) Remove two screws ⓒ and one screw ⓓ.
(4) Remove the EVF upper cover.

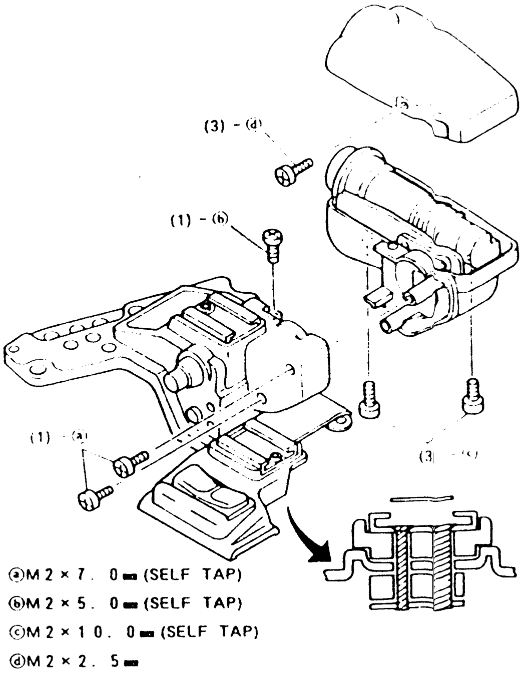

(3) - ⓓ
(1) - ⓑ
(1) - ⓐ
(3) - ⓒ
ⓐM2 × 7.0mm (SELF TAP)
ⓑM2 × 5.0mm (SELF TAP)
ⓒM2 × 10.0mm (SELF TAP)
ⓓM2 × 2.5mm

Fig. III-8

1-2 Disassembling of camera section

1-2-1 Removal of camera key (1), (2) and AF P.C.B.s

(1) Remove two screws ⓐ and two screws ⓑ.
(2) Dismount the camera key (2) P.C.B. by unplugging the CN2703.
(3) Remove the camera key (1) P.C.B.
(4) Unplug the CNs 2508, 2509, 2510 and 2511. Then, while unclawing Ⓒ, Ⓓ, Ⓔ and Ⓕ, dismount the AF P.C.B.

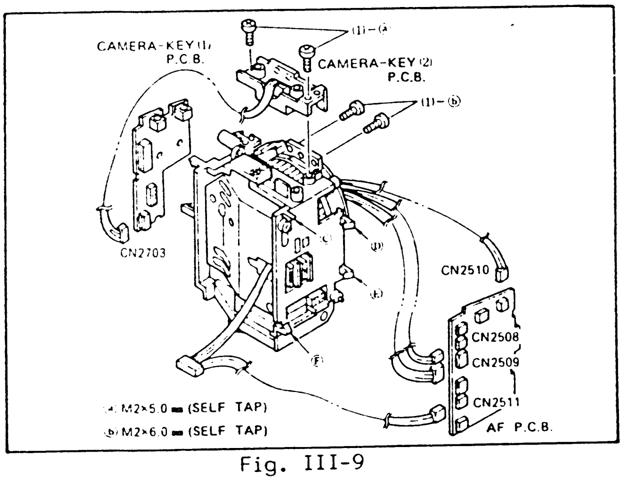

(1) - ⓐ
CAMERA-KEY (1) P.C.B.
CAMERA-KEY (2) P.C.B.
(1) - ⓑ
CN2703
Ⓒ
Ⓓ
Ⓔ
Ⓕ
CN2510
CN2508
CN2509
CN2511
AF P.C.B.
ⓐ M2×5.0 mm (SELF TAP)
ⓑ M2×6.0 mm (SELF TAP)

Fig. III-9

1-2-2 Removal of camera holder (1) and (2)

(1) Remove the DC/DC converter.
(2) Remove three screws ⓐ, and dismount the camera holder (1).
(3) Unplug two connectors.
(4) Unsolder Ⓐs. (Two points)
(5) Remove two screws ⓐ, and dismount the camera holder (2).

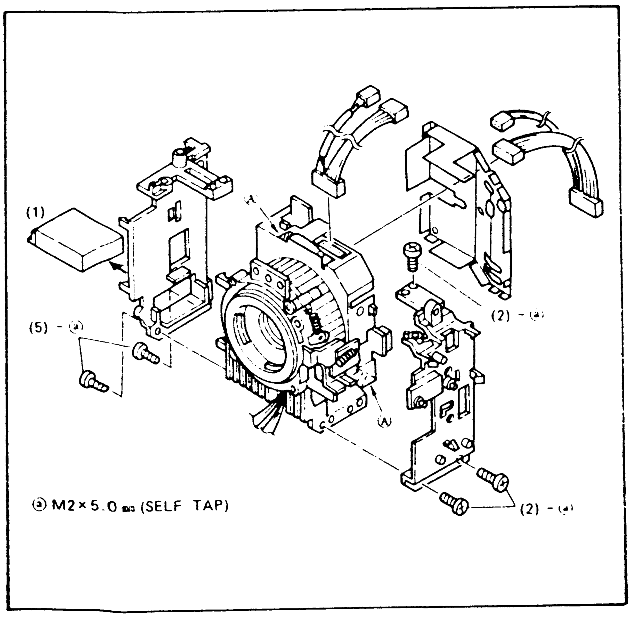

(1)
Ⓐ
Ⓐ
(5) - ⓐ
(2) - ⓐ
(2) - ⓐ
ⓐ M2×5.0 mm (SELF TAP)

Fig. III-10

1-2-3 Removal of process P.C.B.

(1) Unsolder Ⓑs. (Two points)
(2) Open the section of process P.C.B. by 180°. Then, unplug the CN2101.
(3) Remove the section of process P.C.B.
(4) Unsolder Ⓒs. (Nine points)
(5) Dismount the process (1) and (2) P.C.B.s.

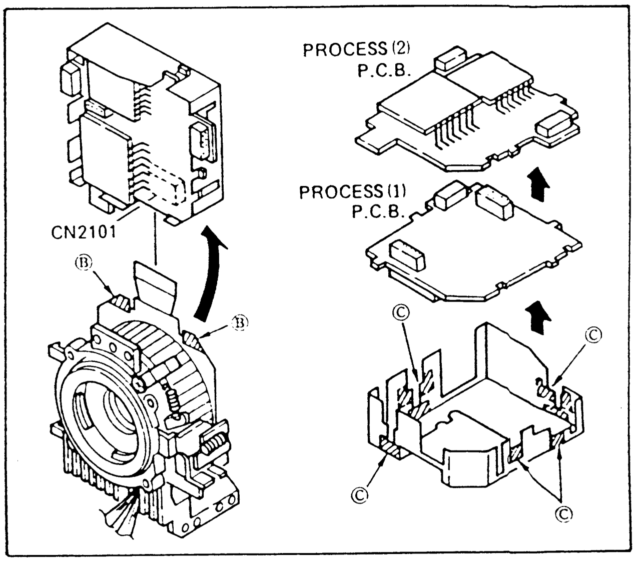

PROCESS (2) P.C.B.
PROCESS (1) P.C.B.
CN2101
Ⓑ
Ⓑ
Ⓒ
Ⓒ
Ⓒ
Ⓒ

Fig. III-11

1-2-4 Disassembling of CCD

(1) Remove the flexible connector.
(2) Remove the shield plate by unplugging the connector.
(3) Remove the flexible connector by unsoldering the pins of CCD (20 pins).
(4) Remove two screws ⓐ.
(5) Remove the rubber, and the crystal filter attached with the CCD holder.

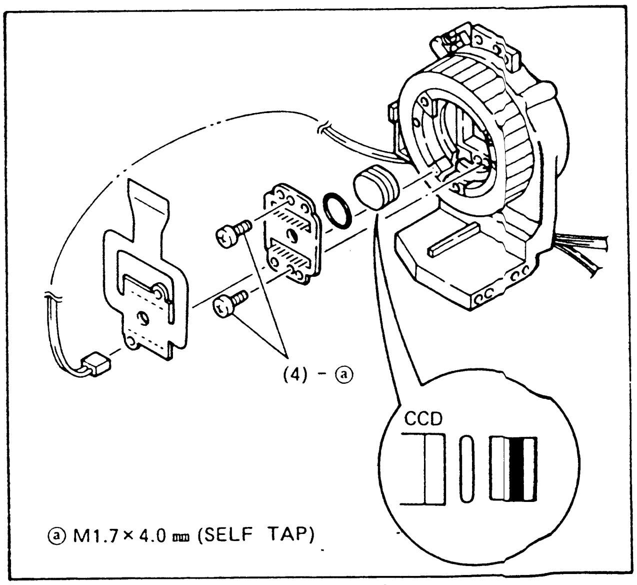

(4) - ⓐ
CCD
ⓐ M1.7×4.0 mm (SELF TAP)

Fig. III-12

1-2-5 Disassembling of actuator section

(1) Remove the adjuster ring.
(2) Dismount the actuator section.
(3) Disassemble the actuator section by removing three screws ⓐ.
(4) Remove three springs.

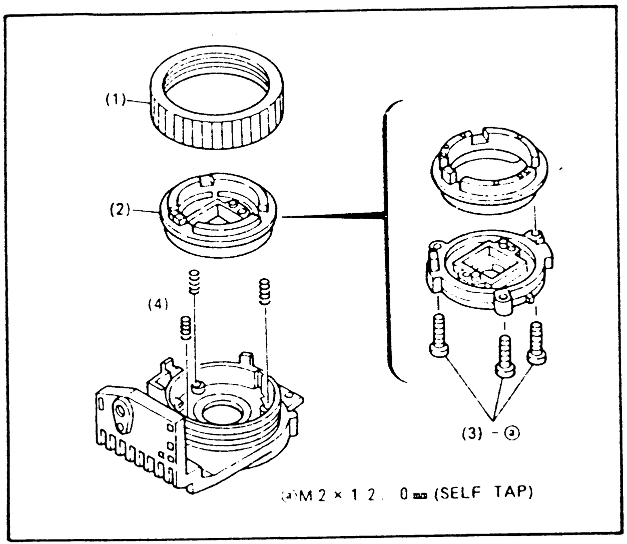

(1)
(2)
(4)
(3) - ⓐ
ⓐM 2 × 1 2 . 0mm (SELF TAP)

Fig. III-13

1-2-6 Disassembling of camera mount section (1)

(1) Dismount the camera mount section by removing six screws ⓐ.
(2) Remove the mount spring coil.
(3) Remove the lock spring (2).
(4) Remove two screws ⓑ.
(5) Remove the lever retainer, the C lock lever and the C lock pin.

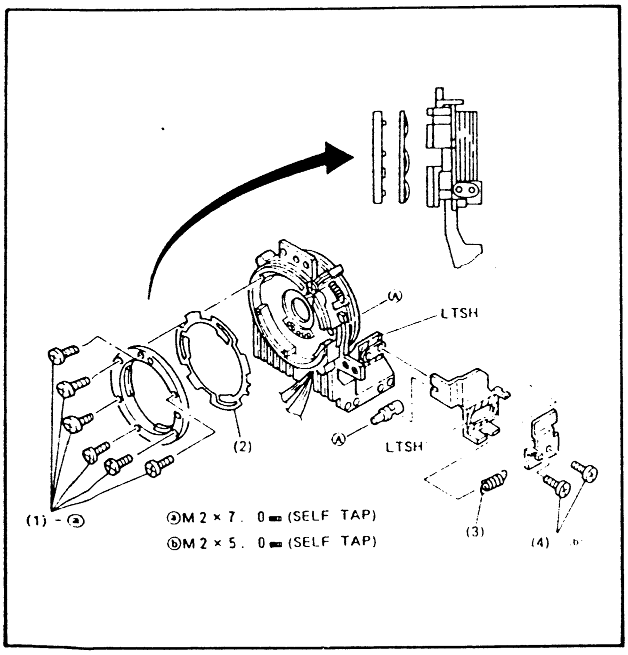

Ⓐ
LTSH
(2)
Ⓐ
LTSH
(1) - ⓐ
ⓐM 2 × 7 . 0mm (SELF TAP)
ⓑM 2 × 5 . 0mm (SELF TAP)
(3)
(4) ⓑ

Fig. III-14

1-2-7 Disassembling of camera mount section (2)

(1) Remove two screws ⓐ.
(2) Remove the lever guide.
(3) Remove the screw ⓑ.
(4) Remove the switch lever and the lock spring (1).
(5) Remove two screws ⓒ.
(6) Remove the contact assembly.

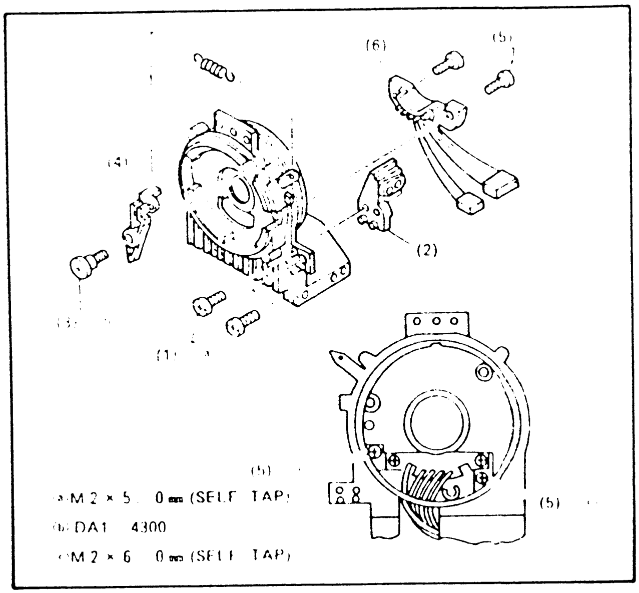
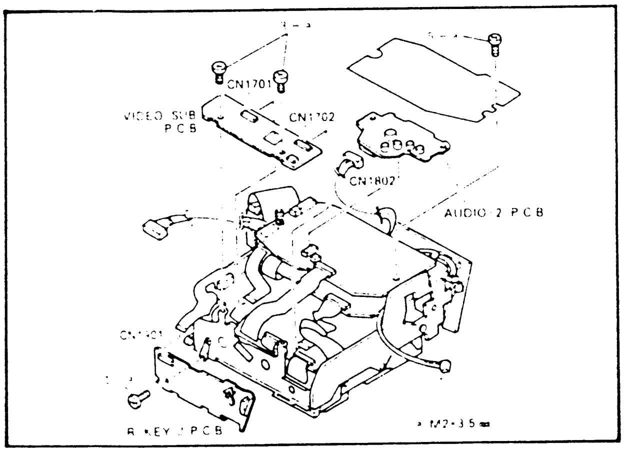

(6)
(5)
(4)
(2)
(3)
(1)
(5)
(5)
ⓐM 2 × 5 . 0mm (SELF TAP)
ⓑDA1 4300
ⓒM 2 × 6 . 0mm (SELF TAP)

Fig. III-15

1-3 Disassembling of recorder section

1-3-1 Removal of R-KEY 2, VIDEO-SUB and AUDIO-2 P.C.B.s

(1) Unplug the CN1901, and remove the screw ⓐ.
(2) Remove the R-KEY 2 P.C.B.
(3) Unplug the CN 1701 and 1702, and remove two screws ⓐ.
(4) Remove the VIDEO-SUB P.C.B.
(5) Remove the screw ⓐ and the VIDEO shield plate 2.
(6) Remove the AUDIO-2 P.C.B. by unplugging the CN1802.

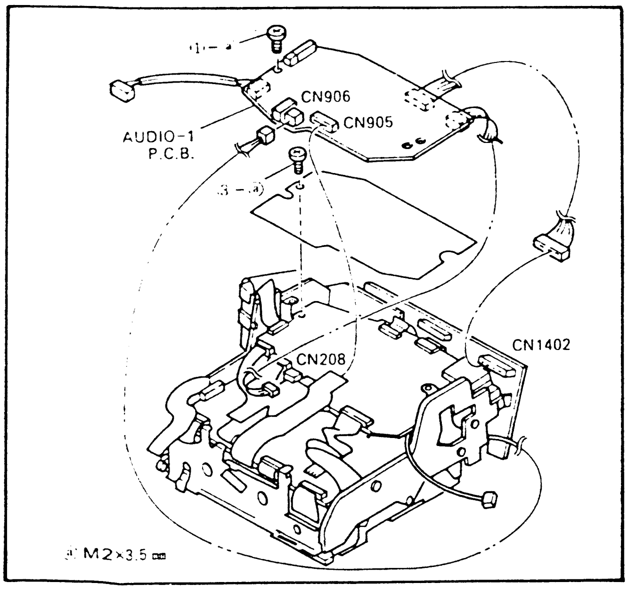


CN1701
VIDEO SUB P.C.B
CN1702
CN1802
AUDIO 2 P.C.B
R KEY 2 P.C.B
ⓐ M2×3.5

Fig. III-16

1-3-2 Removal of AUDIO-1 P.C.B.

(1) Unplug the CN905 and 906, and remove the screw ⓐ.
(2) Remove the AUDIO-1 P.C.B. by unplugging the CN208 and 1402.
(3) Remove the VIDEO-Shield plate 1 by removing the screw ⓐ.

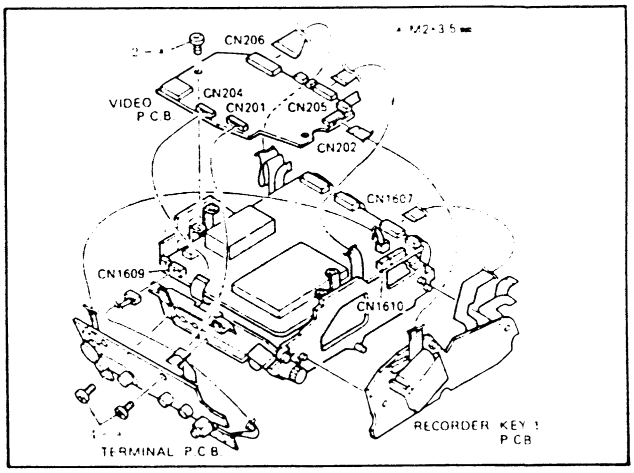


(1)-ⓐ
CN906
CN905
AUDIO-1 P.C.B.
(3)-ⓐ
CN1402
CN208
ⓐ M2×3.5

Fig. III-17

1-3-3 Removal of VIDEO, TERMINAL and R-KEY 1 P.C.B.s

(1) Unplug the CNs 201, 202, 204, 205 and 206.
(2) Remove the screw ⓐ.
(3) Remove the VIDEO P.C.B.
(4) Unplug the CN1609 and 1610, and remove two screws ⓐ.
(5) Remove the TERMINAL P.C.B.
(6) Remove the R-KEY 1 P.C.B. by unplugging the CN1607.

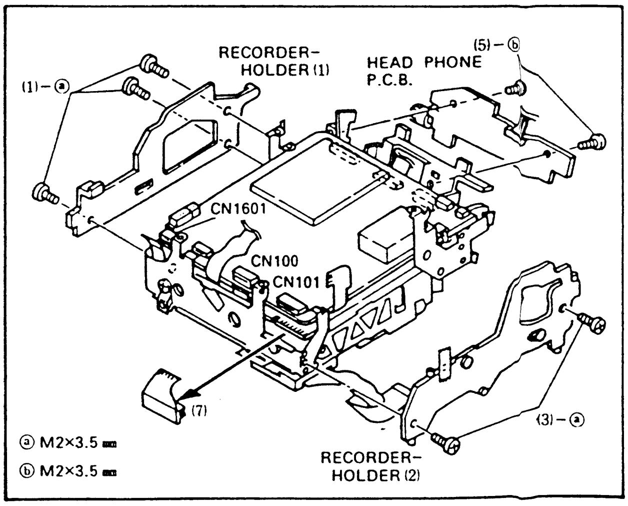


ⓐ M2×3.5
(2)-ⓐ
CN206
VIDEO P.C.B
CN204
CN201
CN205
CN202
CN1607
CN1609
CN1610
(4)-ⓐ
TERMINAL P.C.B.
RECORDER KEY 1 P.C.B

Fig. III-18

1-3-4 Removal of Recorder Holders (1), (2) and HEADPHONE P.C.B.

(1) Remove three screws ⓐ.
(2) Dismount the Recorder Holder (1).
(3) Peel off the tape, and remove two screws ⓐ.
(4) Remove the Recorder Holder (2).
(5) Remove the HEADPHONE P.C.B. by removing two screws ⓑ.
(6) Unplug the CN100 and 1601.
(7) Remove the capstan connector by unplugging the CN101.



(1)-ⓐ
RECORDER-HOLDER(1)
HEAD PHONE P.C.B.
(5)-ⓑ
CN1601
CN100
CN101
(7)
(3)-ⓐ
ⓐ M2×3.5
ⓑ M2×3.5
RECORDER-HOLDER(2)

Fig. III-19

1-3-5 Removal of SYSCON-SERVO P.C.B. and Recorder Holders (3), (4)

(1) Remove two screws ⓐ and one screw ⓑ.
(2) Dismount the Recorder Holder (3).
(3) Remove the SYSCON-SERVO P.C.B. by unplugging the CNs 1606 and 1608.
(4) Remove two screws ⓑ.
(5) Remove the Recorder Holder (4).
(6) Remove the flexible connectors of drum and the loading motor.

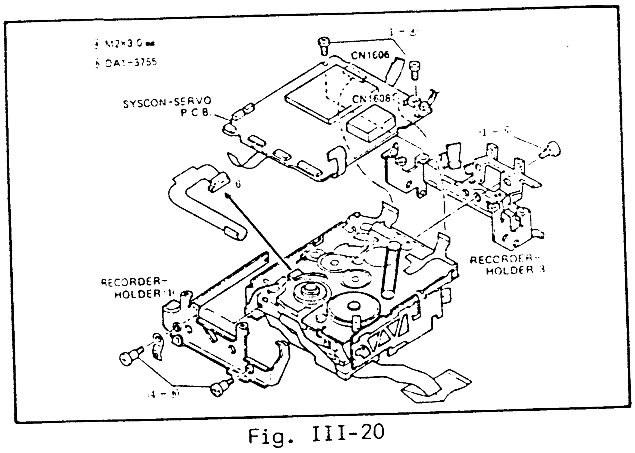

a M2×3.0mm
b DA1-3755
1 - a
CN1606
CN1608
SYSCON-SERVO P.C.B.
(1 - b)
6
RECORDER-HOLDER 3
RECORDER-HOLDER (4)
(4 - b)

Fig. III-20

1-4 Wiring

(1) Camera and recorder units

* Note for Reassembling (See Fig. Ⅲ-3)

Wire the cables of Ⓐ under the flexible connector.

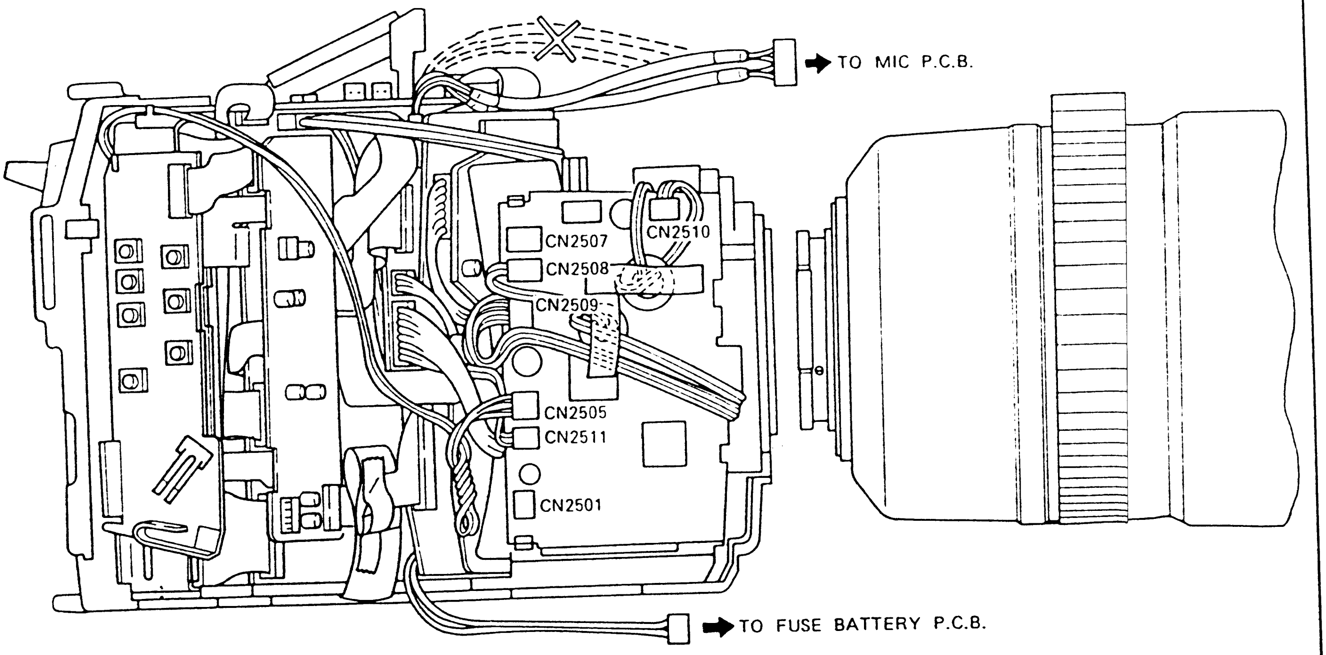
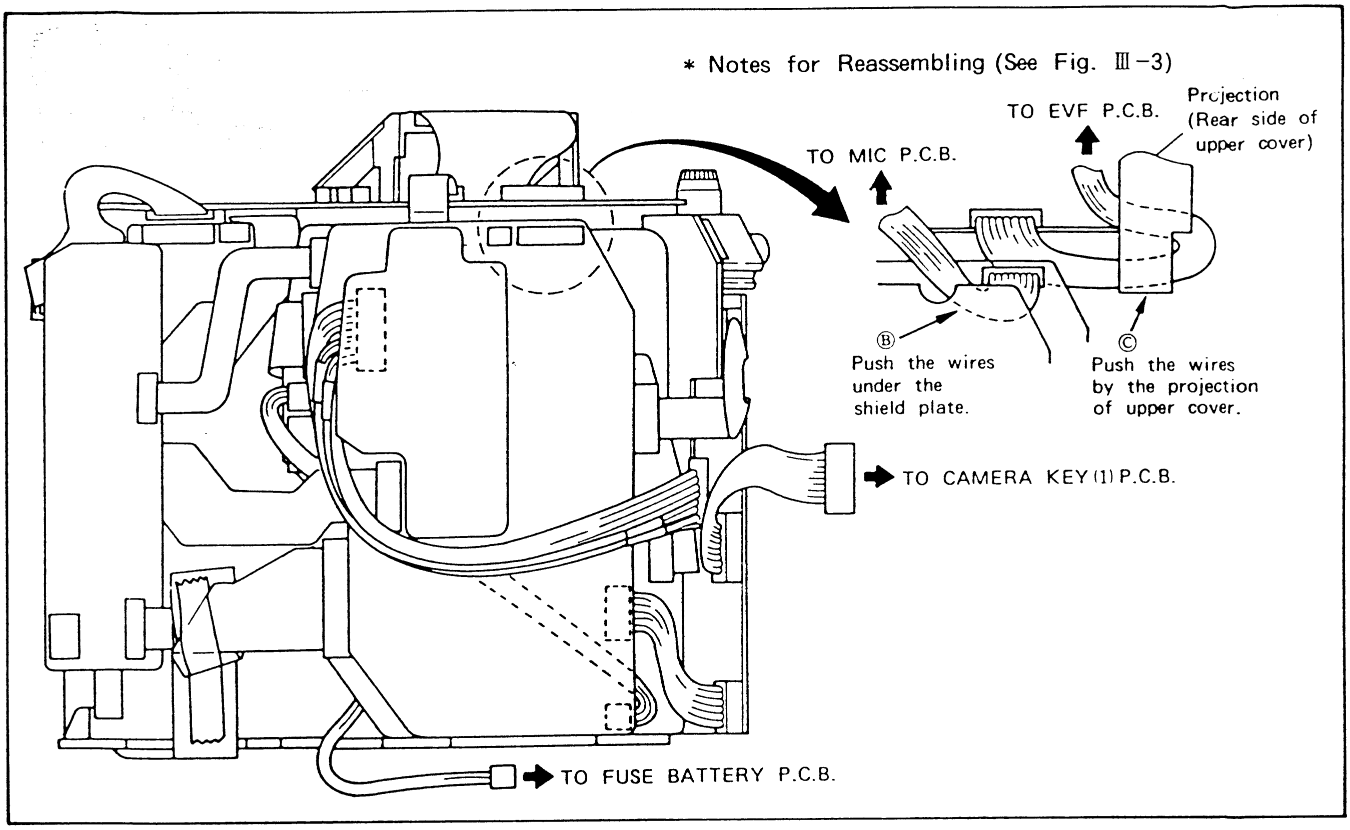

TO MIC P.C.B.
CN2507
CN2510
CN2508
CN2509
CN2505
CN2511
CN2501
TO FUSE BATTERY P.C.B.

Fig. III-21

(2) Recorder unit only


* Notes for Reassembling (See Fig. III-3)

Ⓑ Push the wires under the shield plate.

Ⓒ Push the wires by the projection of upper cover.

TO EVF P.C.B.
Projection (Rear side of upper cover)
TO MIC P.C.B.
Ⓑ
Ⓒ
TO CAMERA KEY (1) P.C.B.
TO FUSE BATTERY P.C.B.

Fig. III-22

(3) SYSCON-SERVO P.C.B.

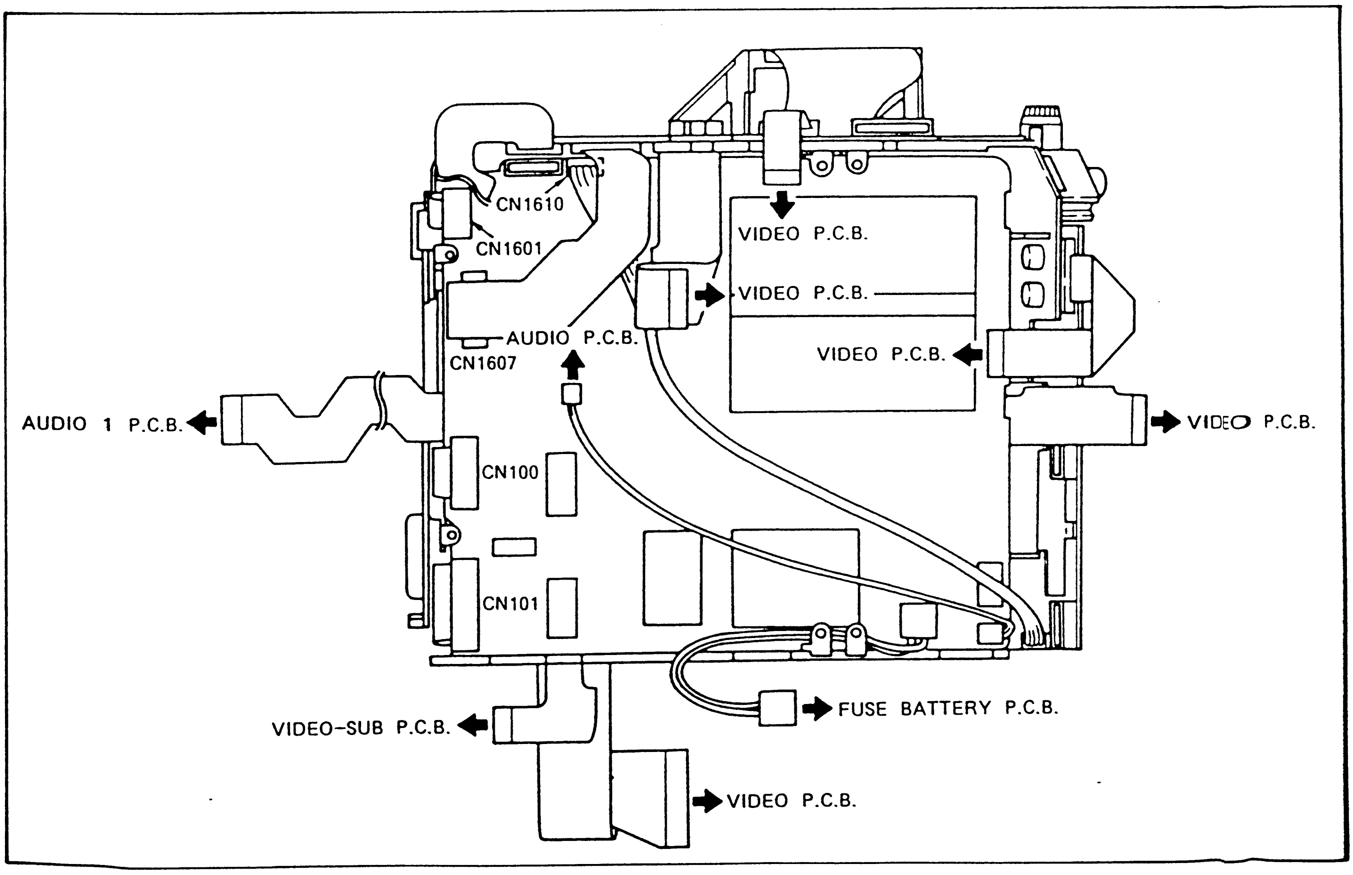

CN1610
CN1601
VIDEO P.C.B.
VIDEO P.C.B.
AUDIO P.C.B.
CN1607
VIDEO P.C.B.
AUDIO 1 P.C.B.
VIDEO P.C.B.
CN100
CN101
FUSE BATTERY P.C.B.
VIDEO-SUB P.C.B.
VIDEO P.C.B.

Fig. III-23

2. Lens Adjustment

2-1 Flange back adjustment

The L1A equips the interchangeable lens.

To function the lens properly, the distance from the mount part of interchangeable lens to the CCD must be adjusted as follows.

CHART	Siemens chart
MODE	Manual Focus
M. EQ.	Monitor TV
TOOL	Character generator (DY9-1115-000)
ADJ.	Adjuster ring
SPEC.	No defocusing found under the conditions below. Distance : 3 m ± 1 cm (Lens front ↔ Chart) Focus ring: 3 m position.

* Note: Be sure to use a 15x lens which is adjusted properly.

Procedures:

(1) Attach the 15x lens to the main unit as shown in the Fig. III-24.

(2) Remove the adhesive on the adjuster ring.

(3) While observing the siemens chart on the monitor TV, turn the focusing ring with a tweezers and stop at the best focused position.
Also, at this time, check the displayed number of ES value. (See 2-1-3 for connection. Page II-4)

(4) Fix the adjuster ring with the adhesive (DY9-3008-000).

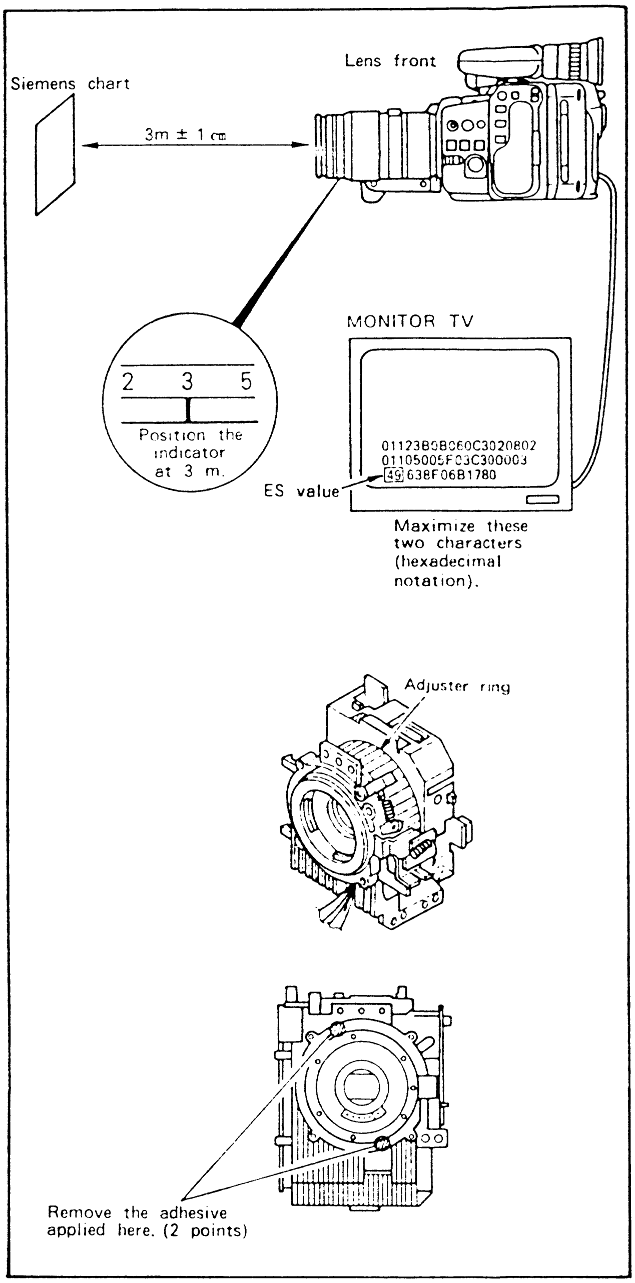

Siemens chart
Lens front
3m ± 1 cm
2 3 5
Position the indicator at 3 m.
MONITOR TV
01123B0B060C3020802
01105005F03C300003
49 638F06B1780
ES value
Maximize these two characters (hexadecimal notation).
Adjuster ring
Remove the adhesive applied here. (2 points)

Fig. III-24

2-2 AF adjustment

2-2-1 Clock adjustment

MODE	AF
M. EQ.	Oscilloscope
TP/TRIG.	AF P.C.B. TP2508 (AF FRAME)/ TP2506 (HD)
ADJ.	AF P.C.B. VC2501 (CLOCK)
SPEC.	26 ± 0.5 µs

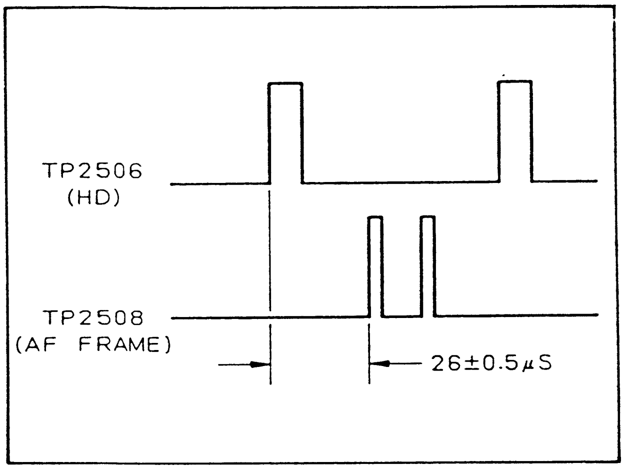


Fig. III-25 10 µs/0.2 V

2-2-2 ES offset adjustment

CHART	Lens capped
MODE	AF, AE lock
M. EQ.	Digital voltmeter
TP/TRIG.	AF P.C.B. TP2502 (+1.8 V) TP2503 (DIV. OUT)
ADJ.	AF P.C.B. VR2501 (OFFSET)
SPEC.	0 ± 10 mV

Procedures:

(1) Shoot a grayscale chart. Then, lock the AE.

(2) Cap the lens.

(3) Connect a digital voltmeter as follows, and perform the adjustment.

TP2503: Adjustment side
TP2502: GND side

2-2-3 Piezo drive adjustment

MODE	Manual Focus
M. EQ.	Oscilloscope
TP/TRIG.	AF P.C.B. TP2522 (PIEZO)
ADJ.	AF P.C.B. VR2502 (PIEZO)
SPEC.	14.4 ± 0.5 V

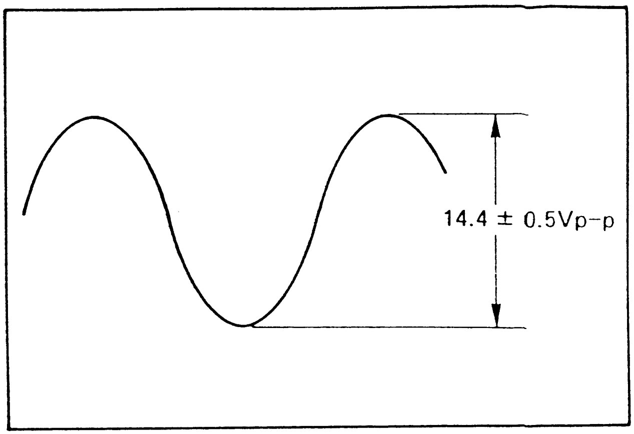


Fig. III-26 10 ms/0.5 V

2-2-4 ES threshold level adjustment

CHART	GRAY/WHITE chart (DY9-2045-000)
MODE	Manual Focus
TOOL	Character generator (DY9-1115-000)
M. EQ.	Monitor TV
ADJ.	AF P.C.B. VR2503 (ES THRESH)
SPEC.	13 (decimal) deducted value from the ES vlaue (hexadecimal) in best-focused. (±1 H)

Procedures:

(1) Connect the character generator. (Refer to 2-1-3. Page II-4)

(2) Shoot the GRAY/WHITE chart at telephoto end. Then, set the best-focused condition by manual focusing. (ES value = Max.)

(3) Adjust the VR2503 so that the ES threshold value is smaller than the above value by 13.

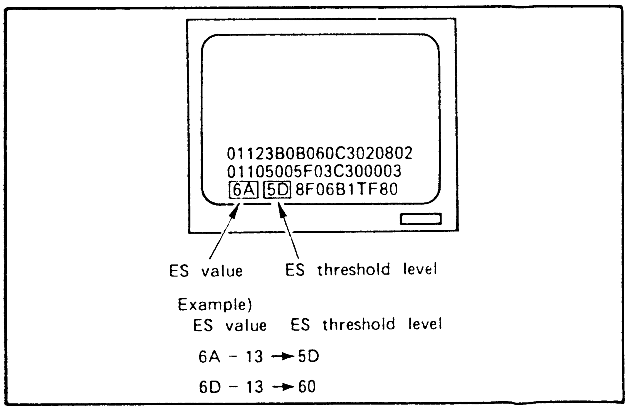

01123B0B060C3020802
01105005F03C300003
6A 5D 8F06B1TF80
ES value
ES threshold level
Example)
ES value
ES threshold level
6A - 13 → 5D
6D - 13 → 60

Fig. III-27

3. Electrical Adjustments of Camera Section

* Note: For adjustments from 3-6 through 3-13, set the PRESET mode. To set it, connect the following test points.

CN2308 Pin 1 (TEST 1) ←→ Pin 6 (GND)

Use DY9-1184-000 for extending connection.

3-1 Clock frequency adjustment

M. EQ.	Frequency counter Connect via an oscilloscope.
TP/TRIG.	PRO 2 P.C.B. CN2308 Pin 7 (CLOCK)
ADJ.	PRO 1 P.C.B. VC2101 (CLOCK)
SPEC.	7.093750 MHz ± 15 Hz

3-2 PLL adjustment

M. EQ.	Digital voltmeter
TP/TRIG.	PRO 2 P.C.B. CN2308 Pin 10 (PLL)
ADJ.	PRO 1 P.C.B. VC2102 (PLL)
SPEC.	2.5 ± 0.1 V

3-3 Gate positioning adjustment (for 24-section system)

M. EQ.	Oscilloscope
TP/TRIG.	PRO 2 P.C.B. CN2308 Pin 4 (GATE 24) Pin 5 (ID)
ADJ.	PRO 1 P.C.B. VC2103 (GATE POSITION)
SPEC.	12 ± 0.5 μs

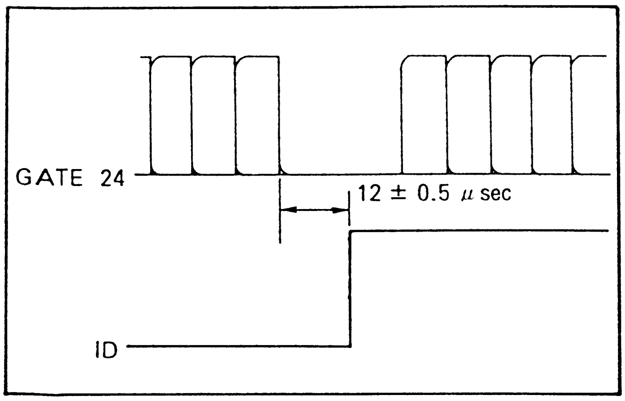


Fig. III-28

3-4 V SUB adjustment

M. EQ.	Digital voltmeter
TP/TRIG.	PRO 2 P.C.B. CN2308 Pin 9 (V SUB)
ADJ.	PRO 2 P.C.B. VR2315 (V SUB)
SPEC.	Set the DC voltage to the indicated value (CCD) in Fig. III-29. ± 0.1 V

3-5 V RGL adjustment

M. EQ.	Oscilloscope
TP/TRIG.	PRO 2 P.C.B. CN2308 Pin 8 (RG)
ADJ.	PRO 2 P.C.B. VR2316 (V RGL)
SPEC.	Set the DC voltage to the indicated value (CCD) in Fig. III-29. ± 0.1 V

3-6 Auto iris adjustment

CHART	Grayscale (5600°K)
MODE	PRESET (CN2308 Pin 1 ←→ Pin 6)
M. EQ.	Oscilloscope
TP/TRIG.	AF P.C.B. TP2521 (YS) PRO 2 P.C.B. CN2308 Pin 5 (ID)
ADJ.	PRO 2 P.C.B. VR2301 (IRIS)
SPEC.	280 ± 10 mV

* Note: After the adjustment, confirm that the rating is obtained even when the lens is capped. (Cover the lens front with your palm.)

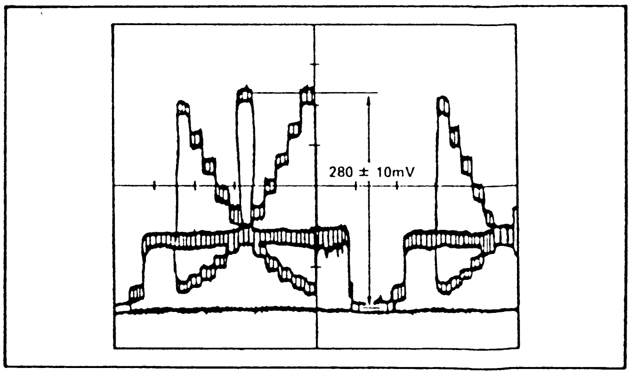
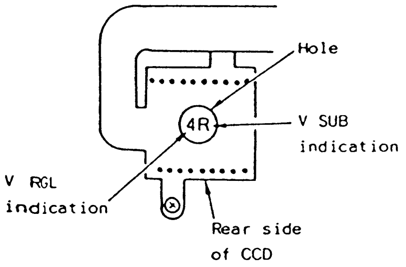


Fig. III-30 10 ms/0.5 V



V REG indication	0	1	2	3	4	5	6	7	8	9
Voltage [V]	0.2	0.7	1.2	1.7	2.2	2.7	3.2	3.7	4.2	4.7

V SUB indication	E	F	G	H	J	K	L	M	N	P
Voltage [V]	9.0	9.5	10.0	10.5	11.0	11.5	12.0	12.5	13.0	13.5

Q	R	S	T	U	V	W	X	Y	Z
14.0	14.5	15.0	15.5	16.0	16.5	17.0	17.5	18.0	18.5

Fig. III-29

3-7 Y AGC adjustment

CHART	Grayscale (5600°K)
MODE	PRESET (CN2308, Pin 1 ↔ Pin 6)
M. EQ.	Oscilloscope
TP/TRIG.	PRO 2 P.C.B. CN2308 Pin 11 (Y AGC)/ Pin 5 (ID)
ADJ.	PRO 2 P.C.B. VR2302 (AGC)
SPEC.	200 ± 10 mV

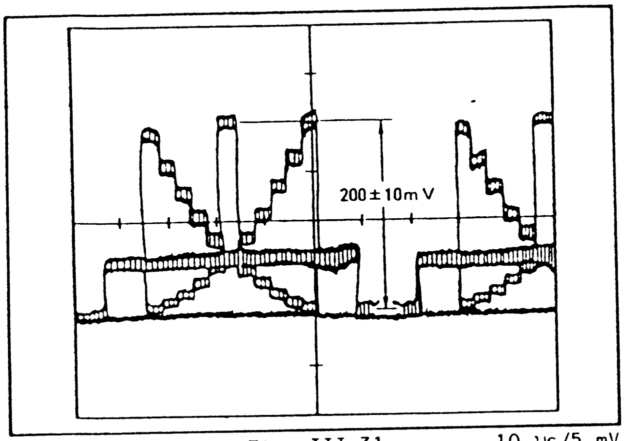


Fig. III-31 10 µs/5 mV

3-8 Y LEVEL adjustment

CHART	Grayscale (5600°K)
MODE	PRESET (CN2308 Pin 1 ↔ Pin 6)
M. EQ.	Oscilloscope
TP/TRIG.	PRO 2 P.C.B. CN2307 Pin 3 (Y OUT)/
ADJ.	PRO 2 P.C.B. VR2314 (Y LEVEL)
SPEC.	660 ± 40 mV

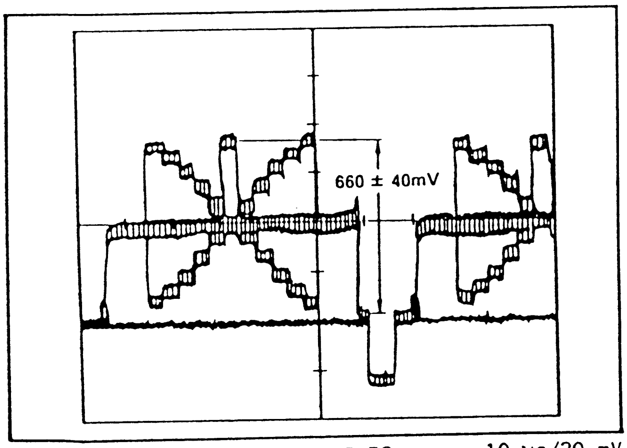


Fig. III-32 10 µs/20 mV

3-9 C LEVEL adjustment

CHART	Grayscale (5600°K)
MODE	PRESET (CN2308 Pin 1 ↔ Pin 6) OFFSET (CN2308 Pin 14 ↔ pin 6)
M. EQ.	Oscilloscope
TP/TRIG.	PRO 2 P.C.B. CN2308 Pin 13 (G OUT)/
ADJ.	PRO 2 P.C.B. VR2313 (C LEVEL)
SPEC.	350 ± 20 mV

* Note: Be sure to set the OFFSET mode.

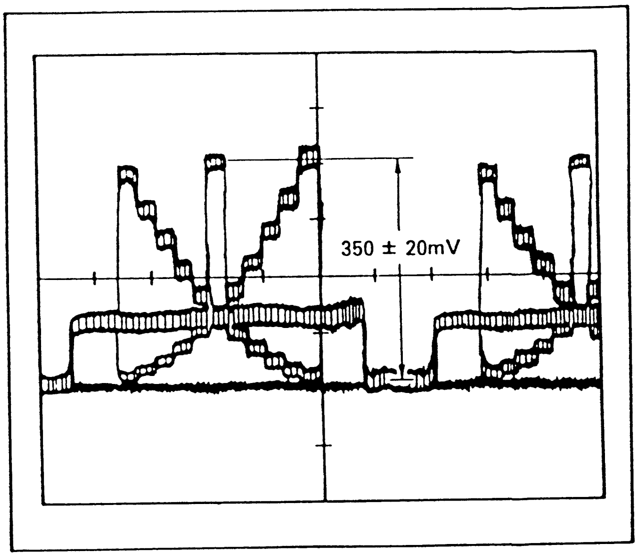


Fig. III-33 10 µs/10 mV

3-10 C2H LEVEL adjustment

CHART	Color bar (5600°K)
MODE	PRESET (CN2308 Pin 1 ↔ Pin 6)
M. EQ.	Vectorscope
ADJ.	PRO 2 P.C.B. VR2318 (C2 GAIN)
SPEC.	Each bright dots to be together Dot split tolerance: Phase; 5° Gain ; 10%

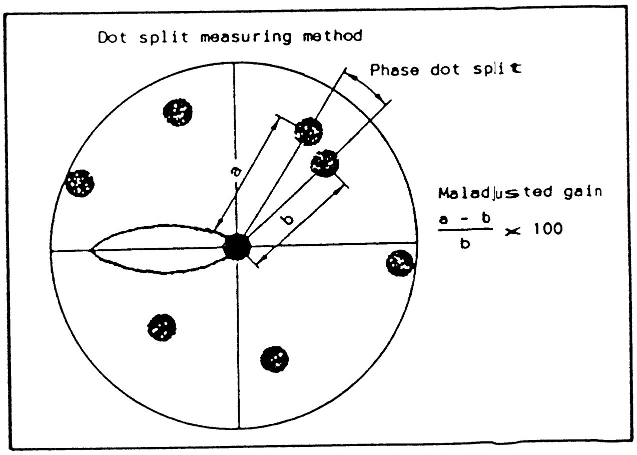


Fig. III-34

3-11 Carrier balance adjustment

CHART	Color bar (5600°K)
MODE	PRESET (CN2308, Pin 1 ←→ Pin 6)
M. EQ.	Vectorscope
ADJ.	PRO 2 P.C.B. VR2305 (R CB)/ VR2306 (B CB)
SPEC.	Set the bright dot (in dark portion) to the center

* Note: Turn the zoom ring to the wide angle side from a standard angle of view, and set the angle as shown in the Fig. III-35.

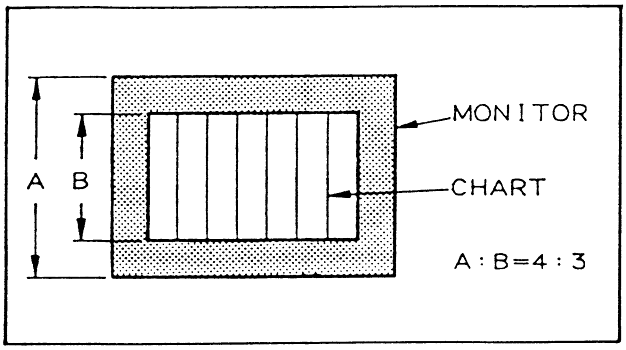

MONITOR
CHART
A
B
A : B=4 : 3

Fig. III-35

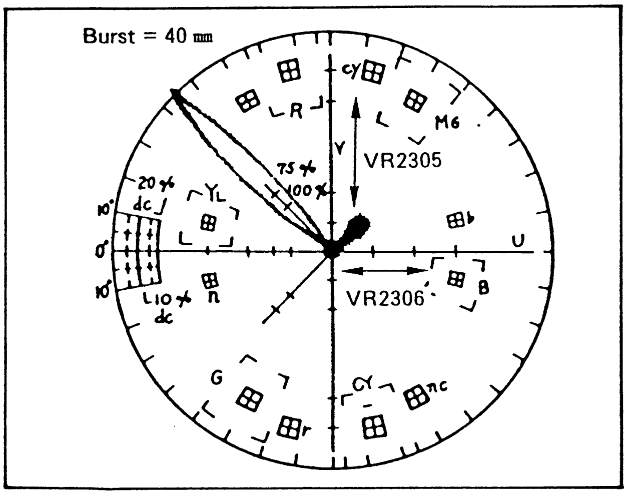

Burst = 40 mm
VR2305
VR2306
75%
100%
20%
10%
Y
U
R
MG
YL
B
G
CY

Fig. III-36

3-12 R/B GAIN adjustment

CHART	Color bar (5600°K)
MODE	PRESET (CN2308, Pin 1 ←→ Pin 6)
M. EQ.	Vectorscope
ADJ.	PRO 2 P.C.B. VR2311 (R GAIN) VR2312 (B GAIN)
SPEC.	Set the bright dot (white) to the center.

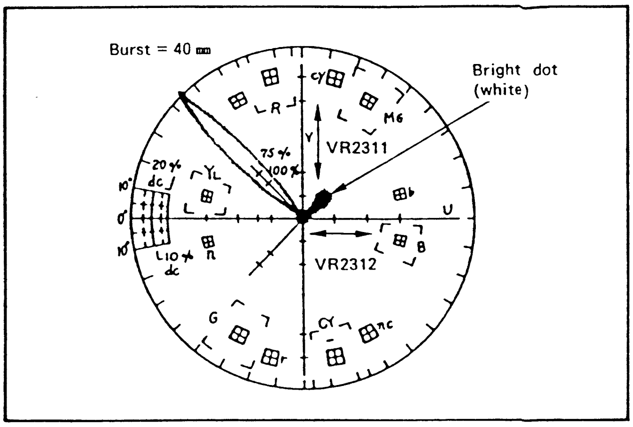

Burst = 40 mm
Bright dot (white)
VR2311
VR2312
75%
100%
20%
10%
Y
U
R
MG
YL
B
G
CY

Fig. III-37

3-13 Color balance adjustment

CHART	Color bar (5600°K)	
MODE	PRESET (CN2308, Pin 1 ←→ Pin 6)	
M. EQ.	Vectorscope	
ADJ.	PRO 2 P.C.B. VR2307 (B-Y HUE) VR2308 (R-Y HUE) VR2309 (B-Y GAIN) VR2310 (R-Y GAIN)	
SPEC.	Color phase R 98 ± 2° Ye 160 ± 2° G 244 ± 8°	Gain (against burst) 2.5 ± 0.1 times 1.6 ± 0.1 times

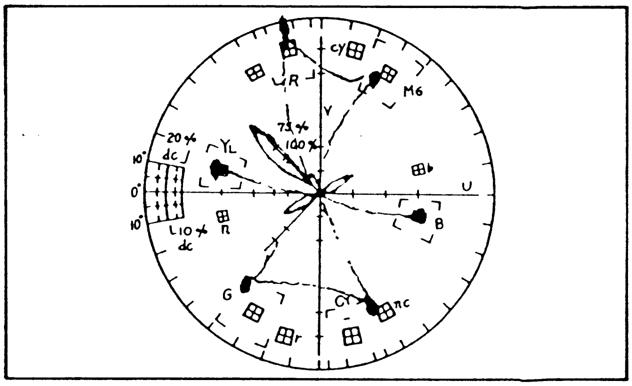

75%
100%
20%
10%
Y
U
R
MG
YL
B
G
CY

Fig. III-38

3-14 FAWB adjustment

CHART	White chart (5600°K, halogen light)
MODE	FAWB adjustment mode
M. EQ.	Vectorscope
TOOL	Halogen light 3200°K, CCB4 filter
TP/TRIG.	CAMERA (2) P.C.B. TP2801 (ADJ)
ADJ.	KEY

* Note: By manipulating the step shift dial, arbitrary step can be performed as you desired.

Procedures:

(1) Set the equipments as shown in the Fig. II-2.

(2) Connect the TP2801 to ground to set the FAWB adjustment mode.

(3) Perform the adjustment (Auto or Manual)

3-14-1 FAWB (Full Auto White Balance) auto adjustment

(1) Confirm each step on the display. At "COMPLETE" state, the bright dots should be positioned on the center of vectorscope.

(2) If any mistake is made during each step, retry from the beginning of relevant step. For this purpose, terminate the relevant step prematurely and go back to its beginning.

Table III-1 (1/2)

STEPS		PROCEDURES	DISPLAY
STEP 1	1-0	1. Ground TP2801 (ADJ).	STEP 1 LENS CAP START?
	1-1	1. Shoot the white chart for 6 sec. or more. Then, push the EXP. A/M button for AE lock. 2. Check that "1" indication flashing on the LED lights up steadily. 3. Cap the lens.	STEP 1 LENS CAP
	1-2	1. Push the AF MACRO/PUSH AF button. 2. After 1 sec. (approx.), the indication on the right column appears.	WORKING ... OK WRITE?
	1-3	1. Push the AF MACRO/PUSH AF button. 2. After 0.5 sec. (approx.), the indication on the right column appears. * Note: If the bright dots are not gathered on the center of vectorscope, perform the carrier balance adjustment (5-10).	COMPLETE
STEP 2	2-1	1. Turn the EXPOSURE CONTROLLER clockwise to set the STEP 2. 2. Shoot the white chart (3200°K) for 6 sec. or more.	STEP 2 3200K START?
	2-2, 3	1. Same as 1-2, 1-3 of STEP 1.	(Same as STEP 1)
STEP 3	3-1	1. Turn the EXPOSURE CONTROLLER clockwise to set the STEP 3. 2. Shoot the white chart (5600°K) for 6 sec. or more.	STEP 3 5600K START?
	3-2, 3	1. Same as 1-2, 1-3 of STEP 1.	(Same as STEP 1)
STEP 4	4-1	1. Turn the EXPOSURE CONTROLLER clockwise to set the STEP 4. 2. Shoot the white chart (5600°K + CCB4) for 6 sec. or more.	STEP 4 5600K + B4 START?
	4-2, 3	1. Same as 1-2, 1-3 of STEP 1.	(Same as STEP 1)

* Note: DISPLAY (Refer to Fig. II-5.)

Table III-1 (2/2)

STEPS		PROCEDURES	DISPLAY
Defective unit (n = step No.)	n-2	1. If the indication on the right column appears even after the step n-2 of each step, check the FAWB control signal loop. * Note: If the right indication still appears, check the type of filter.	WORKING ... NG TRY AGAIN?
	n-3	1. If the indication on the right column appears, perform the n-1 again. If it still appears, check the IC2311 (E^2PROM).	WORKING ...

3-14-2 FAWB (Full Auto White Balance) manual adjustment

(1) Confirm each step on the display. At "COMPLETE" state, the bright dots should be positioned on the place indicated at each step.

(2) If any misoperation is made during a step, try it again from the beginning of relevant step.

Table III-2 (1/2)

STEPS		PROCEDURES	DISPLAY
STEP 1	1-0	1. Remove R2412. Then, connect pin 34 of IC2304 to +5 V. 2. Ground TP2801 (ADJ).	STEP 1 LENS CAP START?
	1-1	1. Shoot the white chart for 6 sec. or more. Then, push the EXP. A/W button for AE lock. 2. Check that "1" indication flashing on the LED lights up steadily. 3. Cap the lens.	STEP 1 LENS CAP
	1-2	1. Push the AF MACRO/PUSH AF button. 2. After 1 sec. (approx.), the indication on the right column appears.	WORKING ... OK WRITE?
	1-3	1. Push the AF MACRO/PUSH AF button. 2. After 0.5 sec. (approx.), the indication on the right column appears. * Note: If the bright dots are not gathered on the center of vectorscope, perform the carrier balance adjustment (5-10).	COMPLETE

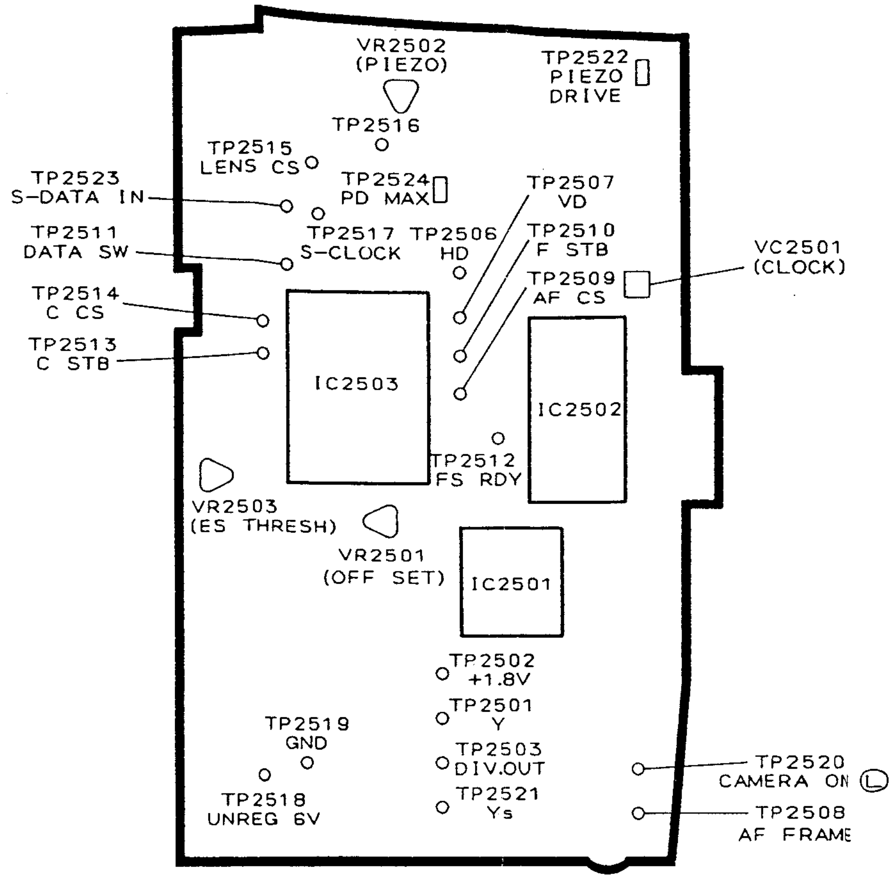
* Note: DISPLAY (Refer to Fig. II-5.)

Table III-2 (2/2)

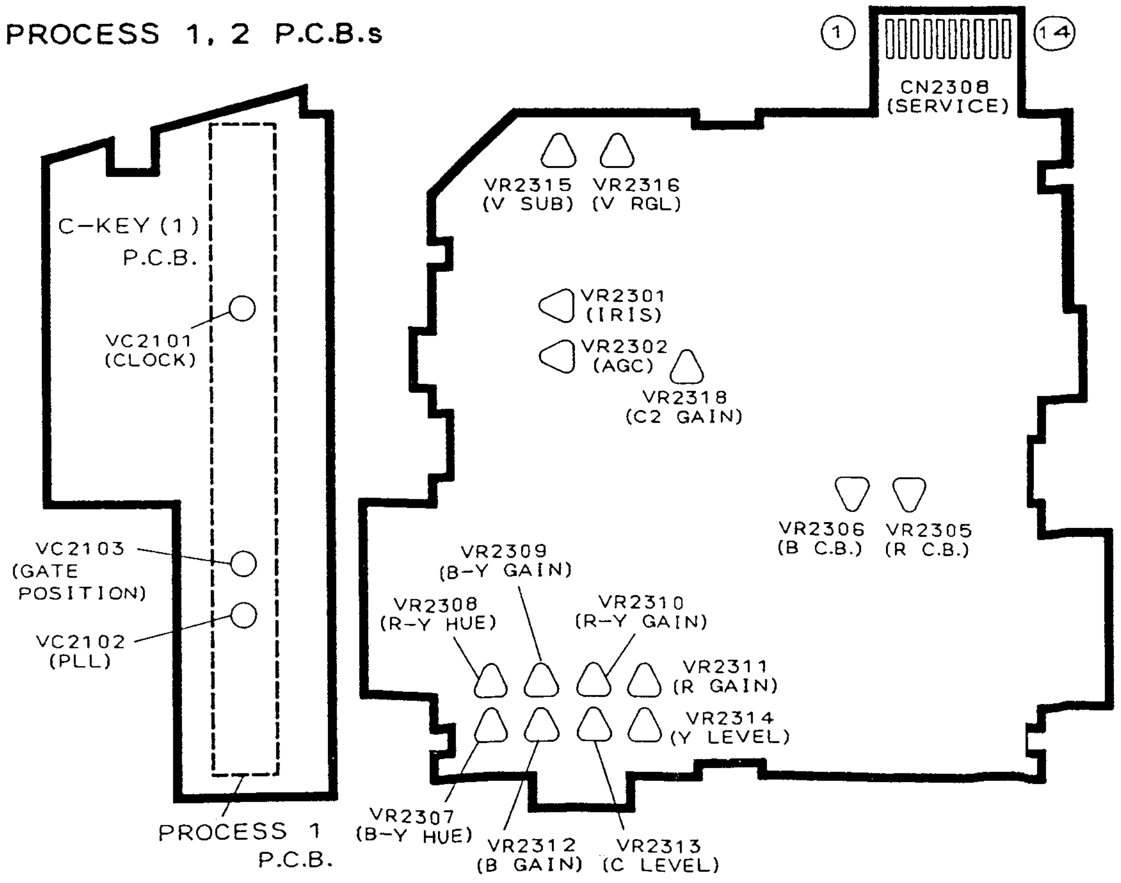
STEPS		PROCEDURES	DISPLAY
STEP 2	2-1	1. Turn the EXPOSURE CONTROLLER clockwise to set the STEP 2. 2. Shoot the white chart (3200°K) for 6 sec. or more.	STEP 2 3200K START?
	2-2	1. Push the AF MACRO/PUSH AF button. 2. After 1 sec. (approx.), the indication on the right column appears. 3. Check the position of bright dots by REC SEARCH and TITLE/DATE buttons. (R-Y)	OK WRITE?
	2-3	1. Push the AF MACRO/PUSH AF button. 2. After 0.5 sec. (approx.), the indication on the right column appears.	COMPLETE
STEP 3	3-1	1. Turn the EXPOSURE CONTROLLER clockwise to set the STEP 3. 2. Shoot the white chart (5600°K) for 6 sec. or more.	STEP 3 5600K START?
	3-2, 3	1. Same as 2-2, 2-3 of STEP 2.	(Same as STEP 2)
STEP 4	4-1	1. Turn the EXPOSURE CONTROLLER clockwise to set the STEP 4. 2. Shoot the white chart (5600°K + CCB4) for 6 sec. or more.	STEP 4 5600K + B4 START?
	4-2, 3	1. Same as 2-2, 2-3 of STEP 2.	(Same as STEP 2)
Defective unit (n = step No.)	n-2	1. If the indication on the right column appears even after the step n-2 of each step, check the FAWB control signal loop. * Note: If the right indication still appears, check the type of filter.	WORKING ... NG TRY AGAIN?
	n-3	1. If the indication on the right column appears, perform the n-1 again. If it still appears, check the IC2311 (E^{2}PROM).	WORKING ...

Locations of TP/VR, VC

AF P.C.B.


VR2502
(PIEZO)
TP2522
PIEZO
DRIVE
TP2516
TP2515
LENS CS
TP2524
PD MAX
TP2523
S-DATA IN
TP2507
VD
TP2511
DATA SW
TP2517
S-CLOCK
TP2506
HD
TP2510
F STB
TP2509
AF CS
VC2501
(CLOCK)
TP2514
C CS
TP2513
C STB
IC2503
IC2502
TP2512
FS RDY
VR2503
(ES THRESH)
VR2501
(OFF SET)
IC2501
TP2502
+1.8V
TP2501
Y
TP2519
GND
TP2503
DIV.OUT
TP2520
CAMERA ON Ⓛ
TP2518
UNREG 6V
TP2521
Ys
TP2508
AF FRAME

PROCESS 1, 2 P.C.B.s


①
⑭
CN2308
(SERVICE)
C-KEY (1)
P.C.B.
VC2101
(CLOCK)
VC2103
(GATE
POSITION)
VC2102
(PLL)
PROCESS 1
P.C.B.
VR2315
(V SUB)
VR2316
(V RGL)
VR2301
(IRIS)
VR2302
(AGC)
VR2318
(C2 GAIN)
VR2306
(B C.B.)
VR2305
(R C.B.)
VR2309
(B-Y GAIN)
VR2308
(R-Y HUE)
VR2310
(R-Y GAIN)
VR2311
(R GAIN)
VR2314
(Y LEVEL)
VR2307
(B-Y HUE)
VR2312
(B GAIN)
VR2313
(C LEVEL)

4. Electrical Adjustments (Recorder/EVF Section)

4-1 SS5V adjustment

MODE	EE
M. EQ.	Digital voltmeter
TP/TRIG.	SYSCON-SERVO P.C.B. IC1602 Pin 8
ADJ.	SYSCON-SERVO P.C.B. VR1601 (SS5V)
SPEC.	5.0 ± 0.02 V

4-2 Undercut adjustment

MODE	REC (SERVICE MODE STEP 2)
M. EQ.	Digital voltmeter
TOOL	WL-600 (DY2-1294-000)
ADJ.	AUTO
SPEC.	5.65 ± 0.05 V

Procedures:

(1) Select the service mode 2.

(2) Apply 5.65 ± 0.05 V to the battery terminal.

(3) Press the DSP CLEAR key (WL-600).
(The adjustment is done automatically, then "WR!" is displayed on monitor TV.)

(4) Press the power off key.
(The voltage is written by the microcomputer as the reference voltage for detection of insufficient power voltage.)

4-3 Switching point adjustment

MODE	PB (SERVICE MODE STEP 5,6)
TOO1	Alignment tape (Tracking B with marker <WR5-1CP> DY9-1086-001) New! WL-600 (DY2-1294-000)
ADJ.	PGDLY0, PGDLY1
SPEC.	0 ± 5 μs

Procedures:

(1) Select the service mode 5.

(2) Play the alignment tape of new type <WR5-1CP>.

* Note: You cannot use the old type (DY9-1086-000) as it has no marker part.

(3) Observe the fall of switching point in delay mode.

(4) Align the left edge of PB-RF marker part (unrecorded part in approx. 100 μs) with the fall of switching point with + and - keys (R-KEY2).

(5) Press the DSP CLEAR key (WL-600).
("WR!" is displayed on EVF.)

(6) Select the service mode 6.

(7) Set the same value adjusted in the service mode 5 with + and - keys (R-KEY2).

(8) Press the DSP CLEAR key (WL-600).
("WR!" is displayed on EVF.)

(9) Press the power off key.
(The adjustment data is written to the E^2PROM by power off.)

Remarks: The service mode 6 is the adjustment for the rise of switching point. However, actually, you input the value of fall point here.

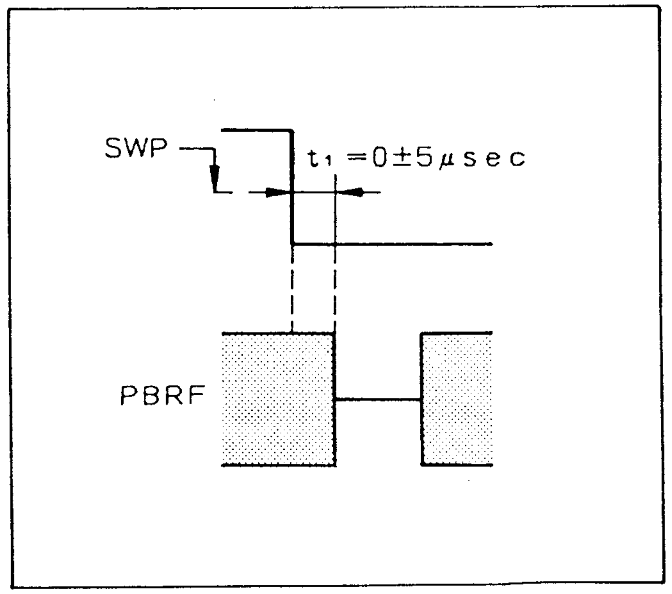


Fig. III-39

4-4 RCTC-PLL adjustment

MODE	PB IC1701 Pin 1 ↔ 6 (Short) Pin 9 ↔ 20 (Short)
M. EQ.	Digital voltmeter
TP/TRIG.	SYSCON-SERVO P.C.B. R1726 Ⓐ
ADJ.	SYSCON-SERVO P.C.B. VR1701 (RCTC PLL)
SPEC.	11.58 ± 0.05 MHz

4-5 DSP Y OUT level adjustment

SIGNAL	100% white video signal, SC
MODE	REC (SERVICE MODE STEP 4)
M. EQ.	Oscilloscope
TP/TRIG.	VIDEO P.C.B. CN204 Pin 1 (Y DSP OUT)
ADJ.	SYSCON-SERVO P.C.B. VR1503 (DSP Y)
SPEC.	1.0 ± 0.05 V

* Note: Set the setting 4 condition.
(Refer to P.II-6.)

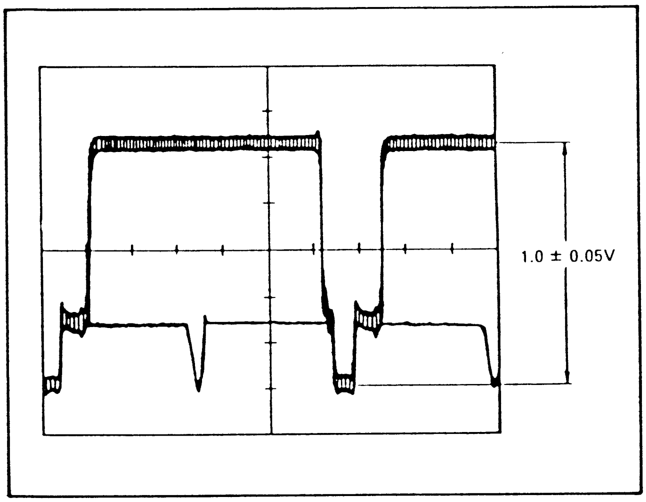


Fig. III-40 10 mV/10 µs

4-6 DSP C OUT level adjustment

SIGNAL	Color bar signal, SC
MODE	REC (SERVICE MODE STEP 4)
M. EQ.	Oscilloscope
TP/TRIG.	VIDEO P.C.B. CN204 7 pin (C DSP OUT)
ADJ.	SYSCON-SERVO P.C.B. VR1504 (DSP C)
SPEC.	Maximize peak to peak

* Note: Set the setting 4 condition.
(Refer to P.II-6.)

4-7 VIDEO AGC adjustment

SIGNAL	100% white video signal
MODE	EE
M. EQ.	Oscilloscope
TP/TRIG.	VIDEO P.C.B. TP214 (Y 1)
ADJ.	VIDEO P.C.B. VR203 (Y AGC)
SPEC.	500 ± 10 mV

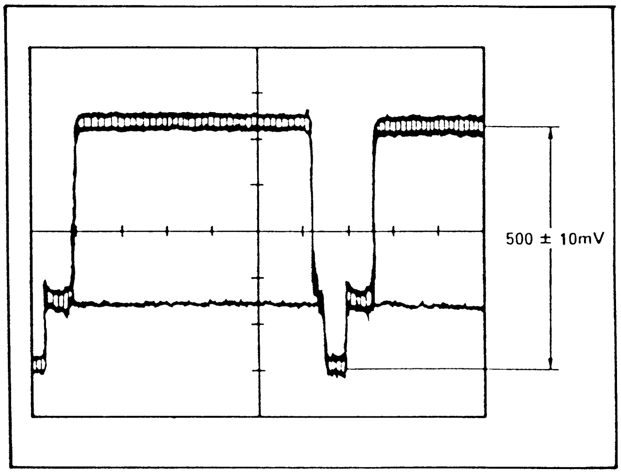


Fig. III-41

4-8 Comb filter adjustment

SIGNAL	Self-record/playback tape (HiME), color bar signal
MODE	PB
M. EQ.	Oscilloscope
TP/TRIG.	VIDEO P.C.B. TP203 (COMB C)
ADJ.	VIDEO P.C.B. VR210 (2HDL PHASE) VR202 (2HDL LEV.)
SPEC.	Minimize chrominance component

Procedure:

(1) To minimize the chrominance component at the TP203, adjust VRs 210 and 202 alternately.

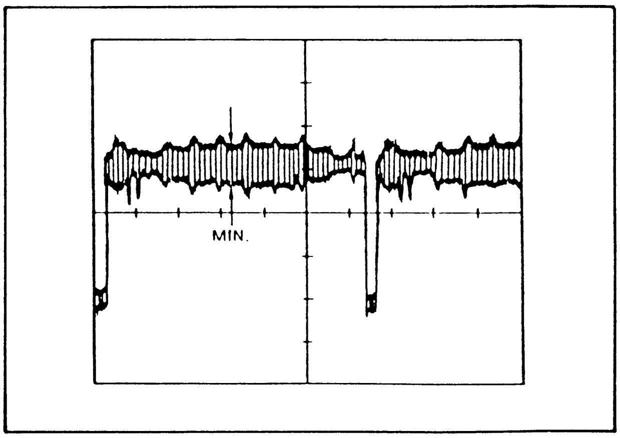


Fig. III-42 5 mV/10 µs

4-9 Video level adjustment

SIGNAL	100% white video signal
MODE	EE
M. EQ.	Oscilloscope
TP/TRIG.	VIDEO P.C.B. TP206 (Y2)
ADJ.	VIDEO P.C.B. VR309 (REC Y LEV.)
SPEC.	500 ± 10 mV

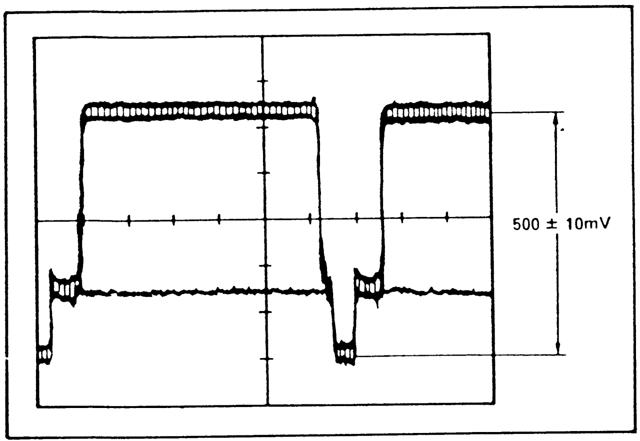


Fig. III-43 10 mV/10 µs

4-10 Chrominance emphasis adjustment

SIGNAL	Color bar signal
MODE	EE
M. EQ.	Oscilloscope
TP/TRIG.	VIDEO P.C.B. TP208 (C ENPHA)
ADJ.	VIDEO P.C.B. VL301 (C ENPHA)
SPEC.	Minimize yellow portion at its right end

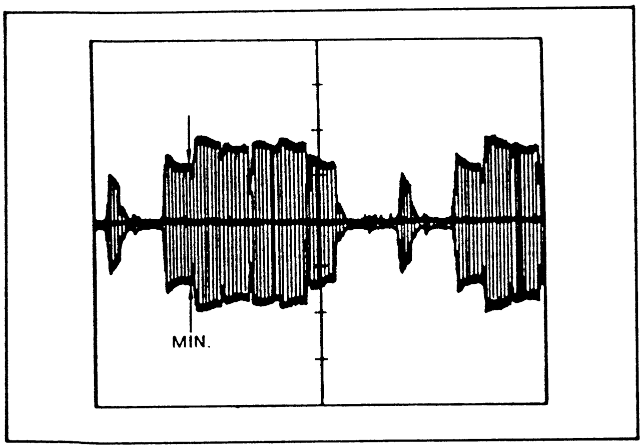


Fig. III-44 10 mV/10 µs

4-11 Y FM carrier (normal) adjustment

* Note: Use a normal tape.

SIGNAL	No signal (Terminal-opened)
MODE	EE/NORMAL
M. EQ.	Oscilloscope, Frequency counter
TP/TRIG.	VIDEO P.C.B. CN206 pin 8 (REC RF)
ADJ.	VIDEO P.C.B. VR206 (N CAR)
SPEC.	4.38 ± 0.02 MHz

4-12 Y FM deviation (normal) adjustment

* Notes:
1. Use a normal tape.
2. Observe the signal waveform having the shortest cycle.
3. After this adjustment, perform the 4-11 and 4-12 adjustments. Then, perform this adjustment again to check if the specified value is kept.

SIGNAL	100% white video signal
MODE	EE/NORMAL
M. EQ.	Oscilloscope
TP/TRIG.	VIDEO P.C.B. CN206 pin 8 (REC RF)
ADJ.	VIDEO P.C.B. VR208 (N DEV)
SPEC.	0.19 µs/1 cycle Graduation 3.8 at 50 ns Div.

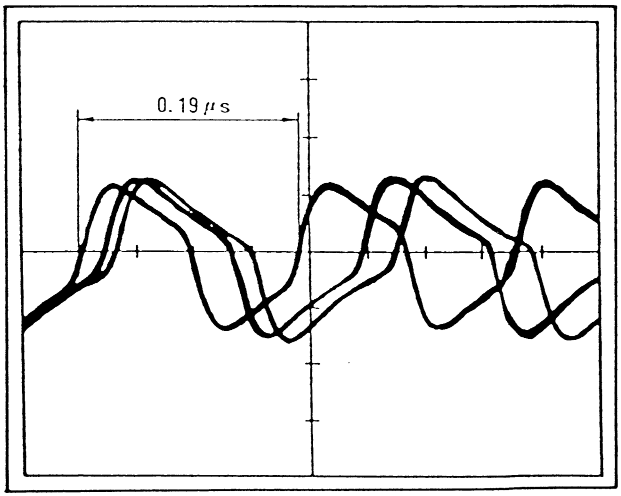


Fig. III-45 5 mV/50 ns

4-13 Y FM carrier (Hi8) adjustment

* Note: Use a Hi8 tape.

SIGNAL	No signal (Terminal-opened)
MODE	EE/Hi8
M. EQ.	Oscilloscope, Frequency counter
TP/TRIG.	VIDEO P.C.B. CN206 pin 8 (REC RF)
ADJ.	VIDEO P.C.B. VR204 (Hi8 CAR)
SPEC.	5.99 ± 0.02 MHz

4-14 Y FM deviation (Hi8) adjustment

* Notes:
1. Use a normal tape.
2. Observe the signal waveform having the shortest cycle.
3. After this adjustment, perform the 4-13 and 4-14 adjustments. Then, perform this adjustment again to check if the specified value is kept.

SIGNAL	100% white video signal
MODE	REC/Hi8
M. EQ.	Oscilloscope
TP/TRIG.	VIDEO P.C.B. CN206 pin 8 (REC RF)
ADJ.	VIDEO P.C.B. VR207 (Hi8 DEV.)
SPEC.	0.3975 μs/3 cycles Graduation 7.95 at 50 ns

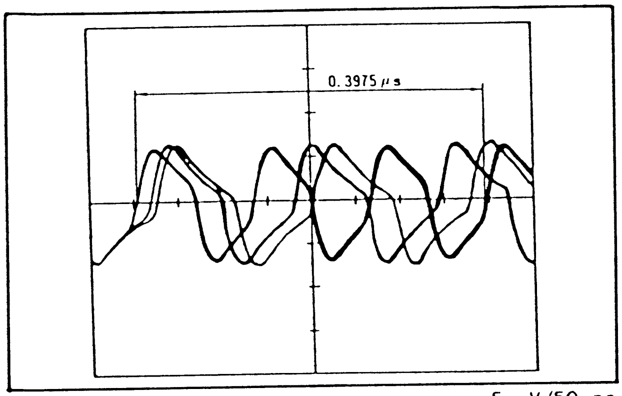


Fig. III-46 5 mV/50 ns

4-15 PB Y level adjustment (1)

SIGNAL	Self-record/playback tape (HiME), 100% white video signal
MODE	PB
M. EQ.	Oscilloscope
TP/TRIG.	VIDEO P.C.B. TP202 (YO)
ADJ.	VIDEO P.C.B. VR306 (PB Y LEVE.1)
SPEC.	500 ± 10 mV

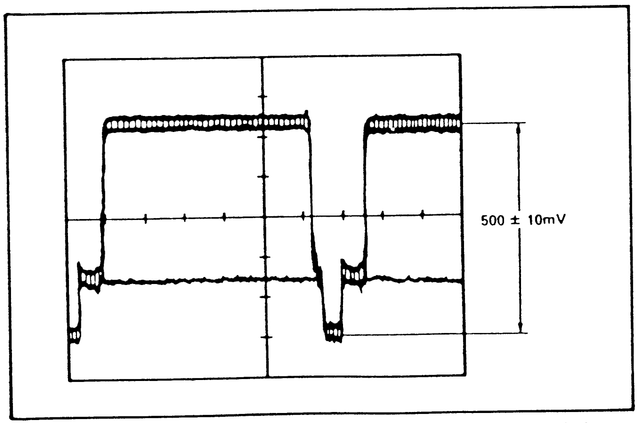


Fig. III-47 10 mV/10 ns

4-16 PB Y level adjustment (2)

SIGNAL	Self-record/playback tape (HiME), 100% white video signal
MODE	PB (S terminal-opened)
M. EQ.	Oscilloscope
TP/TRIG.	VIDEO P.C.B. CN201 pin 1
ADJ.	VIDEO P.C.B. VR308 (PB Y LEV.2)
SPEC.	2.0 ± 0.04 V

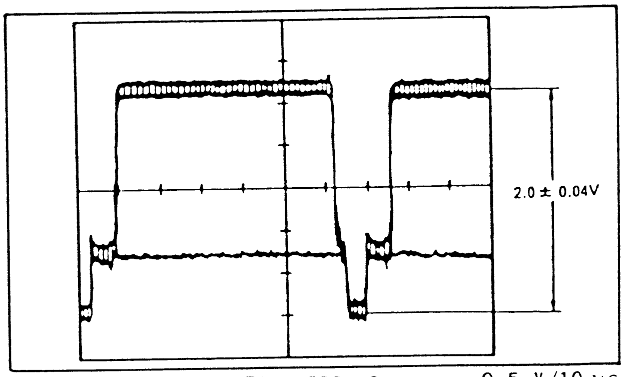


Fig. III-48 0.5 V/10 μs

4-17 Character position of character adjustment

* Note: Display characters by a wireless remote controller with an EVF connected.

SIGNAL	Color bar
MODE	EE
M. EQ.	Monitor TV
TP/TRIG.	VIDEO P.C.B. VC201 (CG SIZE)
SPEC.	Lowermost digit of counter located between blue and black color bars

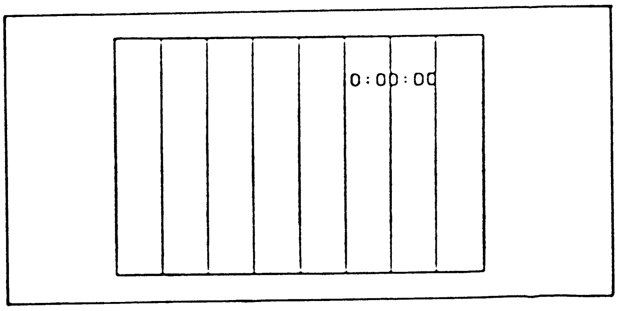


Fig. III-49

4-18 JOG chrominance phase adjustment

SIGNAL	Red signal (pattern generator)
MODE	Search
M. EQ.	Monitor
ADJ.	VR310 (JOG BURST)
SPEC.	Eliminate the black stripes

Proceudres:

(1) Record red signal in LP mode.

(2) Playback and search the recorded part.

(3) Eliminate the black stripes on the screen.

4-19 Peaking adjustment

* Note: Perform this adjustment only after replacing an upper drum assembly, drum assembly, or a HEAD AMP P.C.B.

SIGNAL	V sweep master (Hi8) (DY9-1111-500)
MODE	PB (SERVICE MODE STEP 4)
M. EQ.	Oscilloscope
TP/TRIG.	VIDEO SUB P.C.B. CN1703-Pin 1 (PB/RF) Pin 3 (HSW)
ADJ.	HEAD AMP P.C.B. VR102 (CH-1), VR101 (CH-2), VR151 (CH-1')
SPEC.	4.5 MHz : 8.5 MHz = 3:2

Procedures:

(1) Set the setting 3 condition.

(2) Playback the V sweep master (Hi8).

(3) Observing the waveform, trigger the PB RF signal with the HSW.

(4) Observing the waveform of CH-1 (HSW, High period), adjust it by VR102 as specified.

(5) Observing the waveform of CH-2 (HSW, Low period), adjust it by VR101 as specified.

(6) Stop the tape, and set the step 4 of service mode.

(7) Push the R. MODE SW to set the LP mode.

(8) Perform the procedures (2) and (3).

(9) Observing the waveform of CH-1' (HSW, LOW period), and adjust it by VR151 as specified.

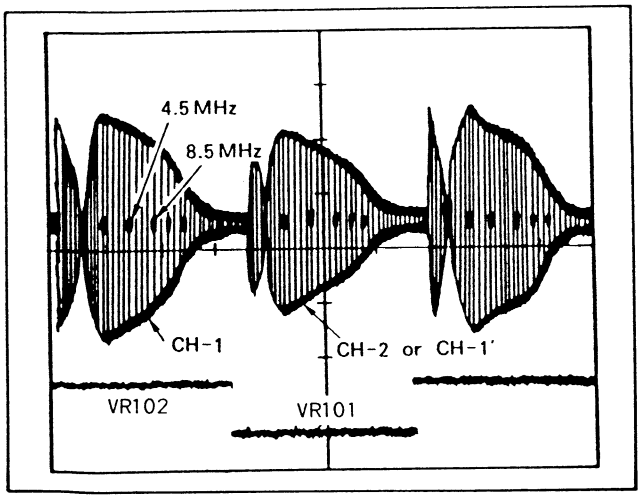


Fig. III-50

4-20 Recording current adjustment

(1) Luminance signal

SIGNAL	No signal (Terminal-opened)
MODE	REC/Hi8 ME tape
M. EQ.	Oscilloscope
TP/TRIG.	HEAD AMP P.C.B. TP101 (REC CURR)
ADJ.	VIDEO P.C.B. VR305 (REC Y)
SPEC.	200 ± 10 mVp-p

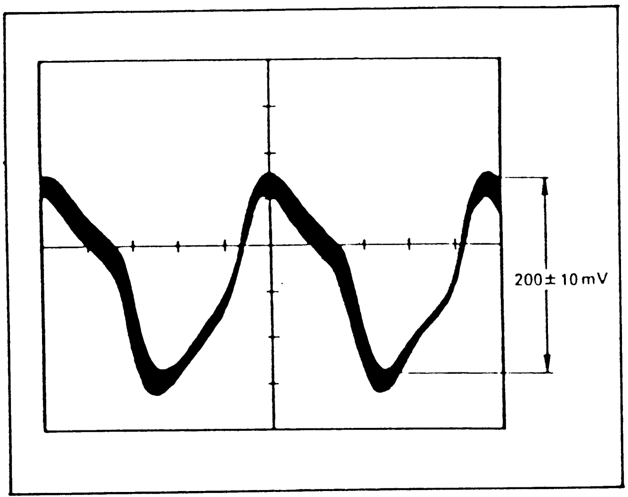


Fig. III-51 5 mV/50 ns

(2) Chrominance, Audio, ATF signals

MODE	REC/Hi8 ME tape
M. EQ.	Oscilloscope
TP/TRIG.	HEAD AMP P.C.B. TP101 (REC CURR)
TOOL	Recording current checker (DY9-1056-000)

* Note: Connect the TP101 with the recording current checker with a probe (1:1).

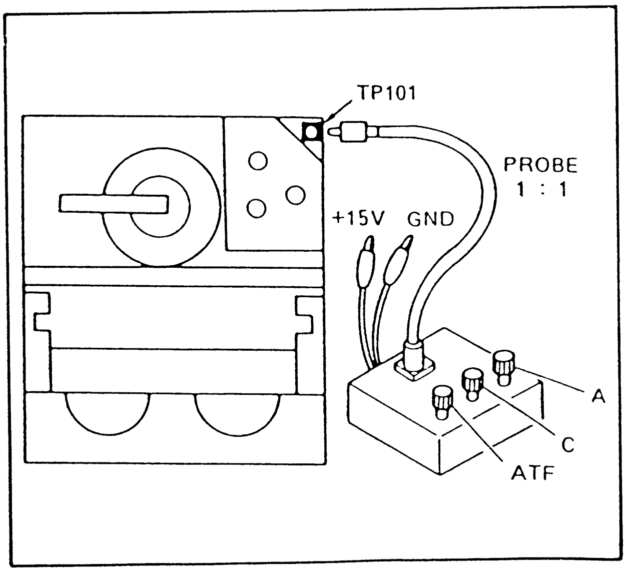


Fig. III-52

° Chrominance

SIGNAL	Red raster signal
ADJ.	VIDEO P.C.B. VR304 (REC C)
SPEC.	1.4 ± 0.1 Vp-p

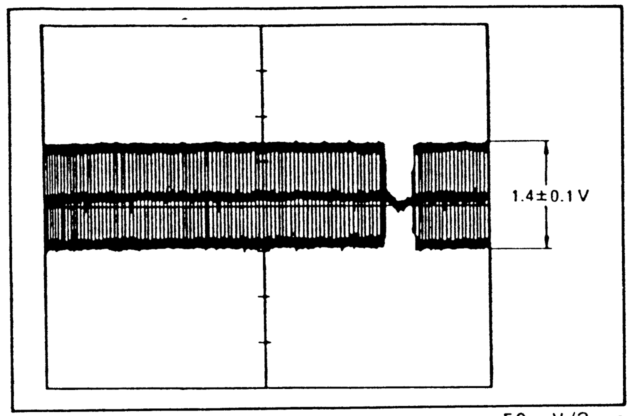


Fig. III-53 50 mV/2 ms

° Audio

* Note: Connect the AUDIO P.C.B.

SIGNAL	100% white video signal
ADJ.	VIDEO P.C.B. VR302 (REC AFM)
SPEC.	1.5 ± 0.1 Vp-p

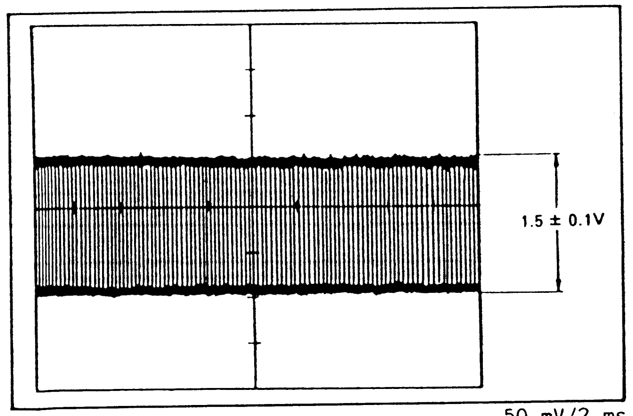


Fig. III-54 50 mV/2 ms

° ATF

SIGNAL	100% white video signal
ADJ.	VIDEO P.C.B. VR303 (REC ATF)
SPEC.	DC 0.6 ± 0.1 V

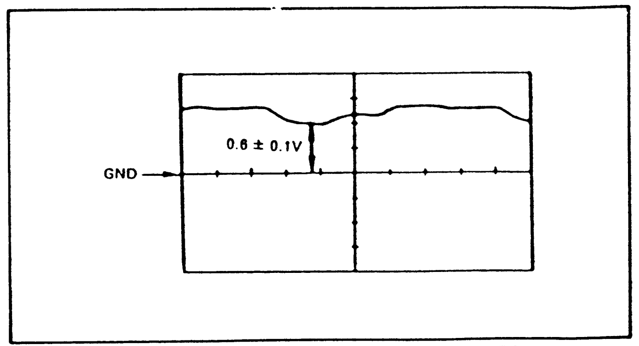
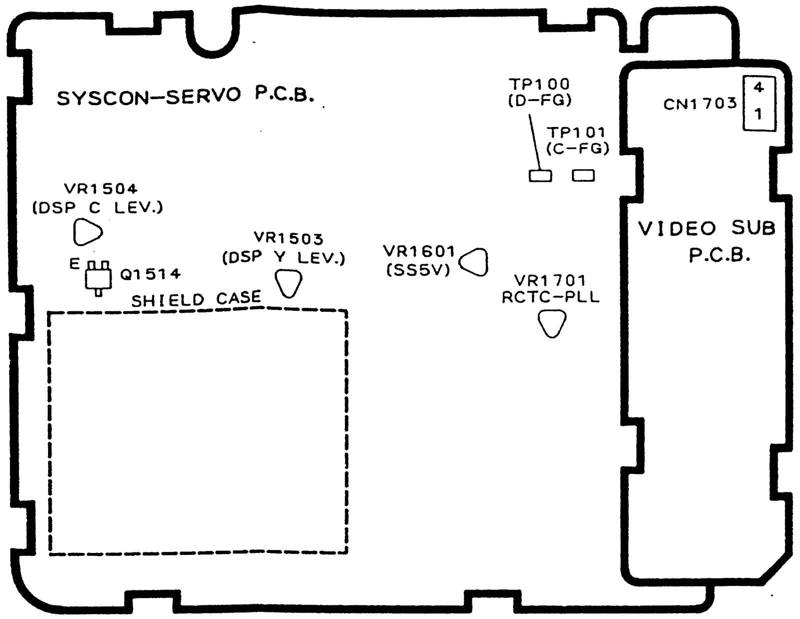


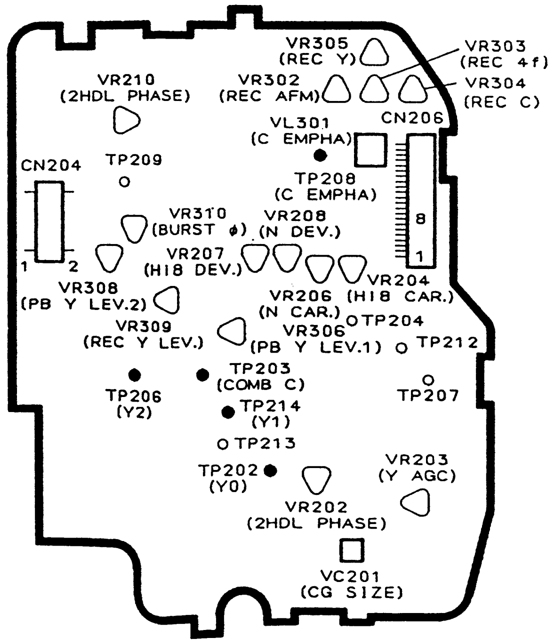
Fig. III-55 50 mV/10 ms

Locations of TP/VR. VC

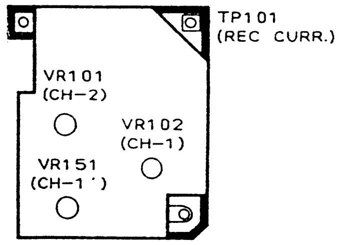
-SYSCON-SERVO, VIDEO SUB P.C.B.


SYSCON-SERVO P.C.B.
TP100
(D-FG)
TP101
(C-FG)
CN1703
4
1
VIDEO SUB
P.C.B.
VR1504
(DSP C LEV.)
E
Q1514
VR1503
(DSP Y LEV.)
VR1601
(SS5V)
VR1701
RCTC-PLL
SHIELD CASE

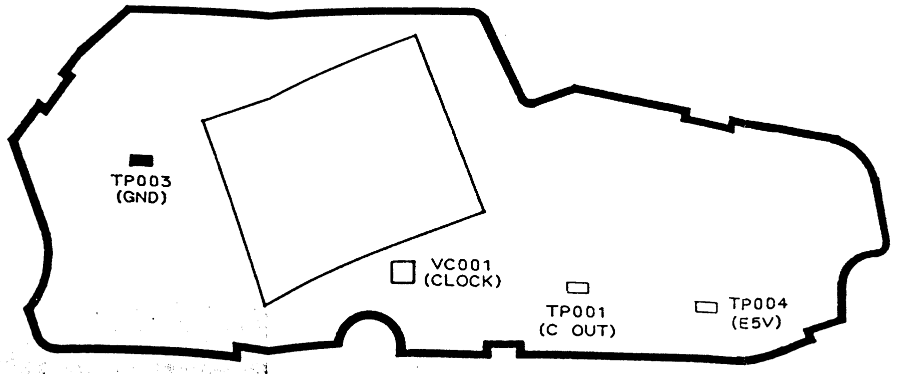
VIDEO P.C.B.


VR305
(REC Y)
VR303
(REC 4f)
VR210
(2HDL PHASE)
VR302
(REC AFM)
VR304
(REC C)
CN206
VL301
(C EMPHA)
CN204
TP209
TP208
(C EMPHA)
VR310
(BURST ϕ)
VR208
(N DEV.)
8
1
1
2
VR207
(H18 DEV.)
VR204
VR308
(PB Y LEV.2)
VR206 (H18 CAR.)
(N CAR.)
TP204
VR309
(REC Y LEV.)
VR306
(PB Y LEV.1)
TP212
TP203
(COMB C)
TP206
(Y2)
TP207
TP214
(Y1)
TP213
TP202
(Y0)
VR203
(Y AGC)
VR202
(2HDL PHASE)
VC201
(CG SIZE)

HEAD AMP P.C.B.


TP101
(REC CURR.)
VR101
(CH-2)
VR102
(CH-1)
VR151
(CH-1')

RECORDER-KEY 1 P.C.B.


TP003
(GND)
VC001
(CLOCK)
TP001
(C OUT)
TP004
(E5V)

5. EVF Adjustments

5-1 Free-run frequency adjustment

SIGNAL	No signal (Terminal-opened)
MODE	EE
M. EQ.	Oscilloscope, Frequency counter
TP/TRIG.	EVF P.C.B. CW2901 pin 6 (HD)
ADJ.	EVF P.C.B. VR2902 (H. PHASE)
SPEC.	15.90 ± 0.05 KHz

5-2 Vertical amplitude adjustment

SIGNAL	Circle (round) subject
MODE	EE
M. EQ.	EVF, Monitor TV
ADJ.	EVF P.C.B. VR2901 (V-SIZE)
SPEC.	Free from distortion Absence of incongruity in comparison with monitor TV screen.

Procedures:

(1) Shoot a circle figure subject fully in the screen.
(2) Adjust the VR2901 so that there is no incongruity in comparison with the monitor TV screen.

5-3 Rotation and centering adjustment

MODE	EE
M. EQ.	EVF
ADJ.	Deflection yoke, Centering magnet
SPEC.	Screen is not tilted and is located right at the center.

Procedures:

(1) Choose a subject for judgement of centering and tilting. Then shoot it.
(2) Loosen the fastening ring to turn the deflection yoke.
(3) Turn the deflection yoke to correct the tilting of subject.
* Note: Move the deflection yoke completely toward the CRT screen.
(4) Tighten the fastening ring.
* Note: The fastening ring must be tightened so that the centering magnet can still be moved.
(5) Adjust the centering magnet so as to locate the subject image at the center.
(6) Tighten the fastening ring completely.
(7) Fix the centering magnet by applying paint or the like (at 180° interval, 2 points).

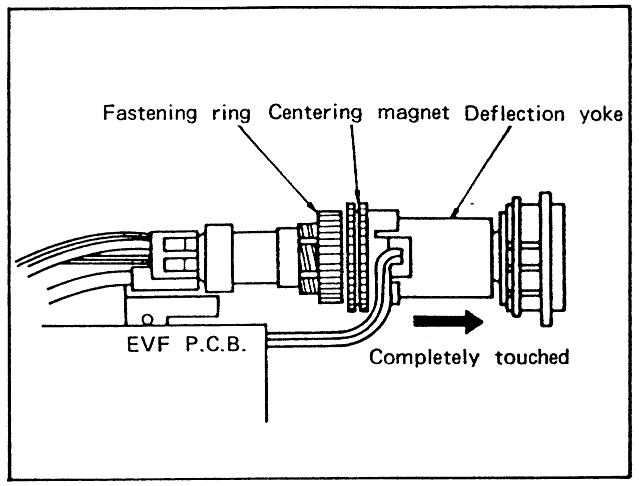


Fig. III-56

5-4 Brightness adjustment

SIGNAL	Self-record/playback tape (grayscale)
MODE	PLAY
M. EQ.	EVF
ADJ.	EVF P.C.B. VR2904 (BRIGHT)
SPEC.	Distinguishable down to 11th step grayscale

5-5 Focus adjustment

MODE	Lens-capped (character indication)
M. EQ.	EVF
ADJ.	EVF P.C.B. VR2903 (FOCUS)
SPEC.	EVF character under optimum focus

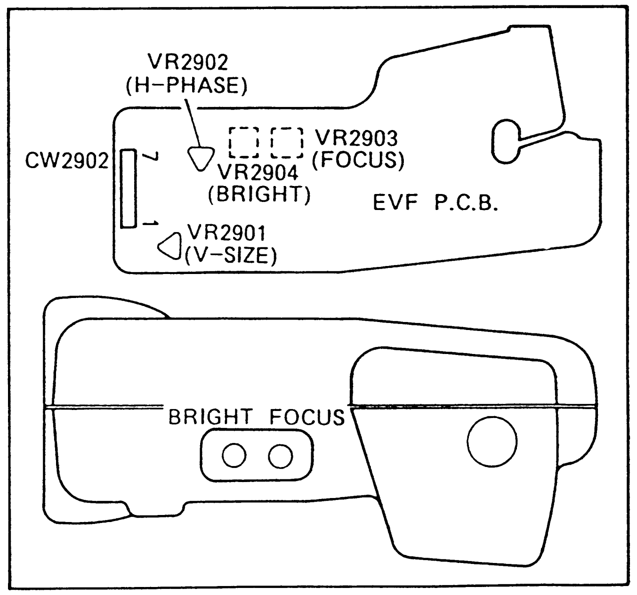


Fig. III-57

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6. Mechani 1 A

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6-1 Mechanical

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(5) Slightly tu
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6-2 How to ive

To operate the
apply the p er

6-3 Replacement

Refer to the Ser
(Replacement of

* Parts ⓐ n t
(Not soldered

6. Mechanical Adjustment of Recorder Section

For mechanical adjustment of the recorder section, refer to the MC-4B Service Manual issued separately.

Setting for tape path adjustment, refer to Fig. II-10 on page II-5.
(The additional mechanical adjustment items for this model only are explained here.)

6-1 Mechanical adjustments

Additional item for fine tracking adjustment in 4-3.

Perform the steps from (1) through (4) as written on the manual.

Then, add the following step of adjustment (5) peculiar to the Hi8 type.

(5) Slightly turn the No. 6 guide clockwise so that B:C = 4:3.5. (See Fig.III-58.)

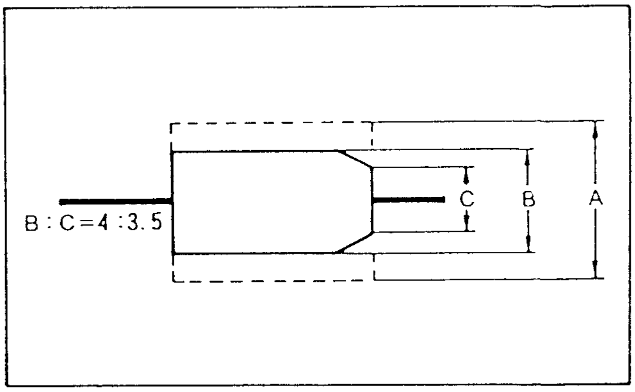

Fig. III-58

6-2 How to drive loading motor

To operate the loading motor independently, apply the power directly. (Fig.III-59)

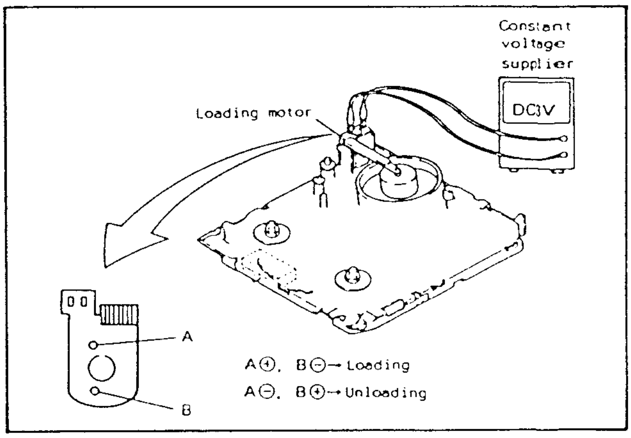

Fig. III-59

6-3 Replacement of upper drum

Refer to the Service Manual for MC-4B.
(Replacement of upper drum, 3-20)

* Parts ⓐ in the Fig.III-60 are plug-in type
(Not soldered as in the conventional models)

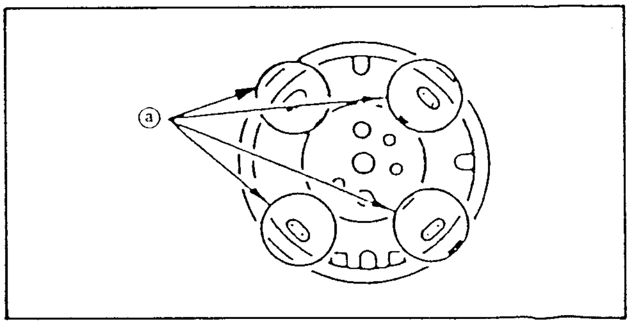

Fig. III-60

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PARTS LIST ······ IV−21

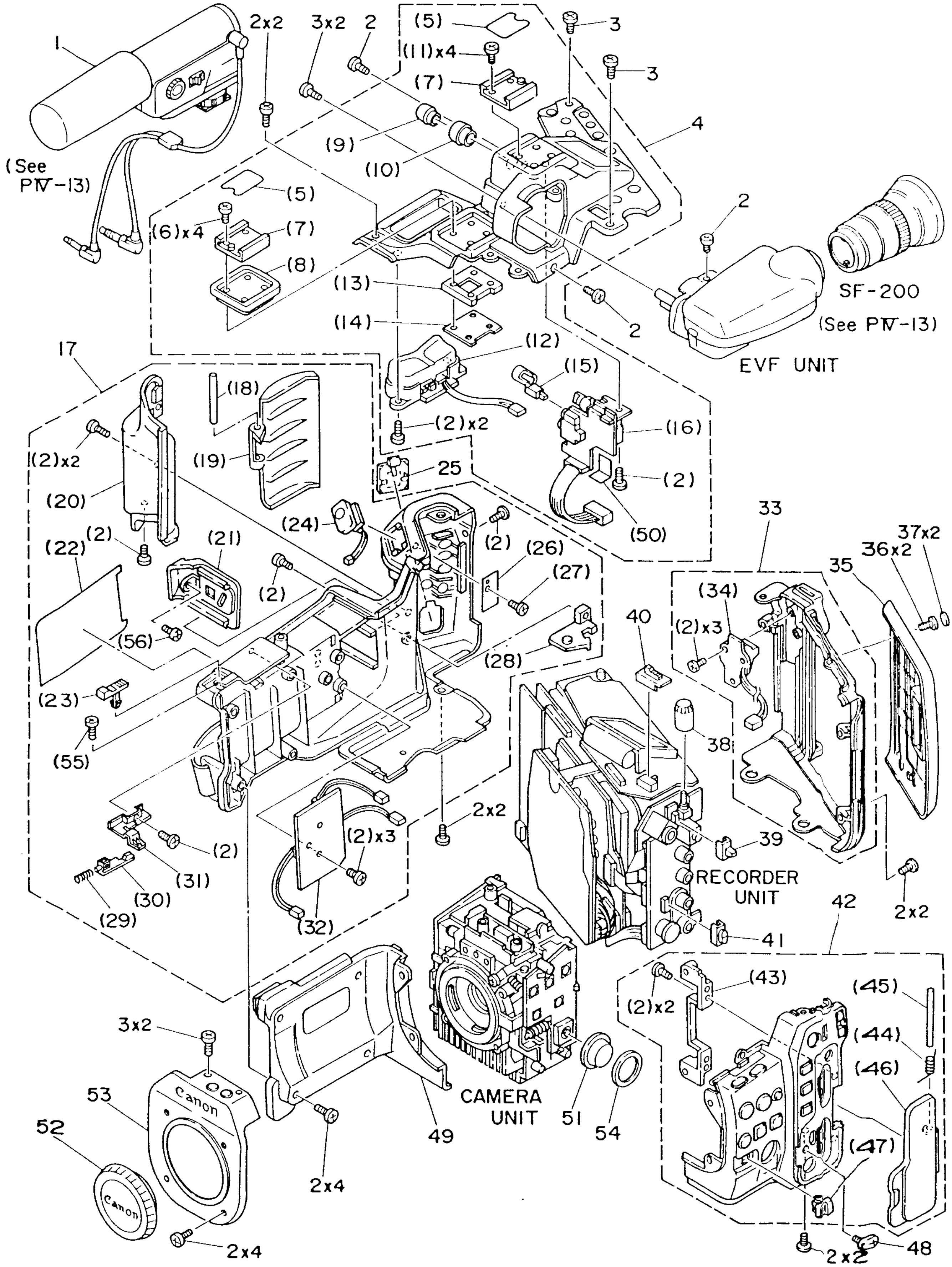
CAUTION

1. ESPECIALLY CRITICAL PARTS IN THE POWER CIRCUIT BLOCK SHOULD NOT BE REPLACED WITH OTHER MARKS.
   CRITICAL PARTS ARE MARKED WITH ⚠ IN THIS ELECTRICAL PARTS LIST.

2. THE NUMBERS INDICATED ON THE CONNECTORS DO NOT CORRESPOND TO THE SYMBOL NUMBERS.
   PLEASE CHECK THE CORRECT SYMBOL NUMBERS OF THE CONNECTORS ON THE INTERCONNECTION SCHEMATIC DIAGRAM.

3. THE MECHANICAL PARTS WITH NO SYMBOL NUMBERS IN THE EXPLODED VIEWS ARE NOT SUPPLIED.

Casing Parts Section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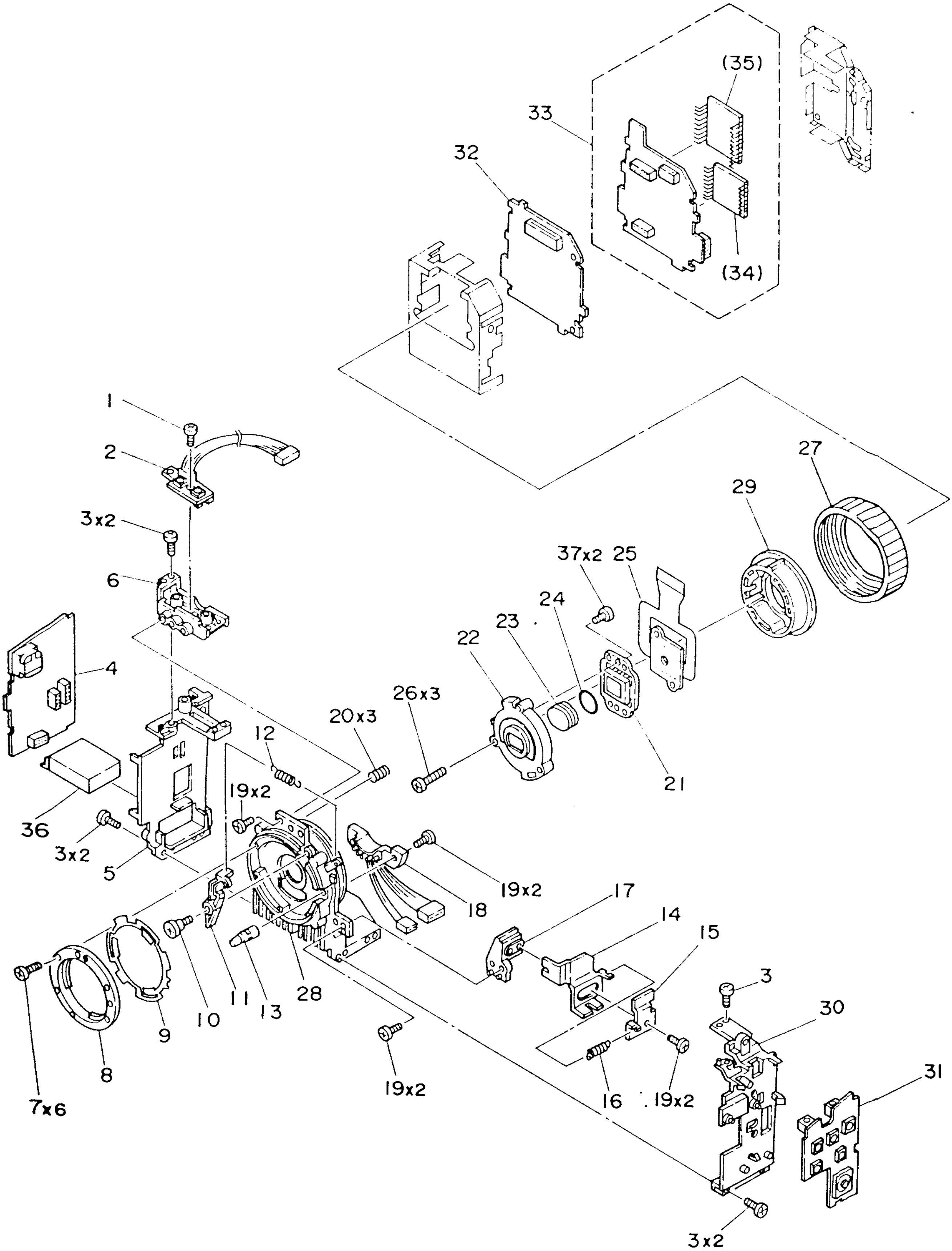
MECHANICAL PARTS

SYMBOL	PART NO.	CLASS	QTY	DESCRIPTION	REMARKS
1	DH9-0527-000 000	B	1	MICROPHONE	
2	XA4-9200-509 000	F	36	SCREW, CROSS-RECESS, PH	
3	XA4-9200-709 000	F	6	SCREW, CROSS-RECESS, PH	
4	DY1-7515-000 000	B	1	TOP COVER ASS'Y	
5	DA1-4500-000 000	B	2	SHETT, ACCESSORY SHOE	
6	DA1-4496-000 000	F	4	SCREW, CROSS-RECESS	
7	DA1-4499-000 000	B	2	SHOE, ACCESSORY	
8	DA1-4494-000 000	B	1	DAMPER (1)	
9	DY1-7317-000 000	B	1	KNOB, AUDIO VOLUME (R)	
10	DY1-7318-000 000	B	1	KNOB, AUDIO VOLUME (L)	
11	XA4-8200-609 000	F	4	SCREW, CROSS-RECESS, FCH	
12	DY2-1352-000 000	B	1	ZOOM SWITCH (1)	
13	DA1-4495-000 000	B	1	DAMPER (2)	
14	DA1-4400-000 000	C	1	PLATE	
15	DA1-4342-000 000	B	1	BUTTON, ATTENATOR	
16	DG1-1384-000 000	C	1	MIC P.C.B.	
17	DG1-2270-000 000	B	1	LEFT COVER ASS'Y	
18	DA1-2211-000 000	C	1	SHAFT	
19	DA1-5698-000 000	B	1	COVER (A), GRIP	
20	DA1-4372-000 000	B	1	COVER (B), GRIP	
21	DF1-0874-000 000	B	1	BUTTON, TRIGGER	
22	DA1-4353-000 000	B	1	SEAL	
23	DA1-4329-000 000	B	1	KNOB, BATTERY	
24	DY1-7210-000 000	B	1	COVER, TRIGER SWITCH	
25	DA1-4346-000 000	C	1	COVER, LITHIUM BATTERY	
26	DA1-4397-000 000	C	1	SPRING, PLATE	
27	XA4-9200-409 000	F	1	SCREW, CROSS-RECESS, PH	
28	DA1-4350-000 000	C	1	HOLDER, GRIP COVER (B)	
29	DS1-5182-000 000	C	1	SPRING, COIL	
30	DA1-4330-000 000	C	1	HOOK. BATTERY	
31	DA1-4331-000 000	C	1	LEVER, BATTERY	
32	DG1-1412-010 000	C	1	FUSE BATTERY P.C.B.	
33	DG1-1391-000 000	B	1	COVER, REAR	
34	DG1-1196-000 000	B	1	ZOOM SWITCH (2)	
35	DF1-1226-000 000	B	1	COVER, CASSETTE	
36	XA1-7200-409 000	F	2	SCREW, CROSS-RECESS, PH	
37	DA1-4344-000 000	A	2	SEAL	
38	DA1-4323-000 000	B	1	VOLUME, KNOB, HEADPHONE	
39	DA1-5357-000 000	B	1	KNOB, CAMERA MODE	
40	DA1-4319-000 000	B	1	KNOB, EJECT	
41	DA1-4316-000 000	B	1	KNOB, EDIT	
42	DG1-2269-000 000	B	1	RIGHT COVER ASS'Y	
43	DA1-4337-000 000	C	1	HOLDER, JACK	
44	DS1-6075-000 000	C	1	SPRING, COIL	
45	DA1-4336-000 000	C	1	SHAFT	
46	DA1-5696-000 000	B	1	COVER, JACK	
47	DA1-4321-000 000	B	1	KNOB, LENS EJECT	
48	XA1-7200-509 000	F	1	SCREW, CROSS-RECESS, PH	
49	DY2-1362-000 000	B	1	GRIP COVER	
50	DA1-5491-000 000	C	1	SHEET	
51	DA1-4322-000 000	B	1	KNOB, IRIS	
52	DA1-4345-000 000	B	1	CAP, CAMERA	
53	DF1-1223-000 000	B	1	COVER, FRONT	
54	DA1-4394-000 000	C	1	CUSHION, IRIS	
55	DA1-5355-000 000	F	1	SCREW, CROSS-RECESS	
56	X99-0619-000 000	F	1	SCREW, CROSS-RECESS	

Camera Unit Section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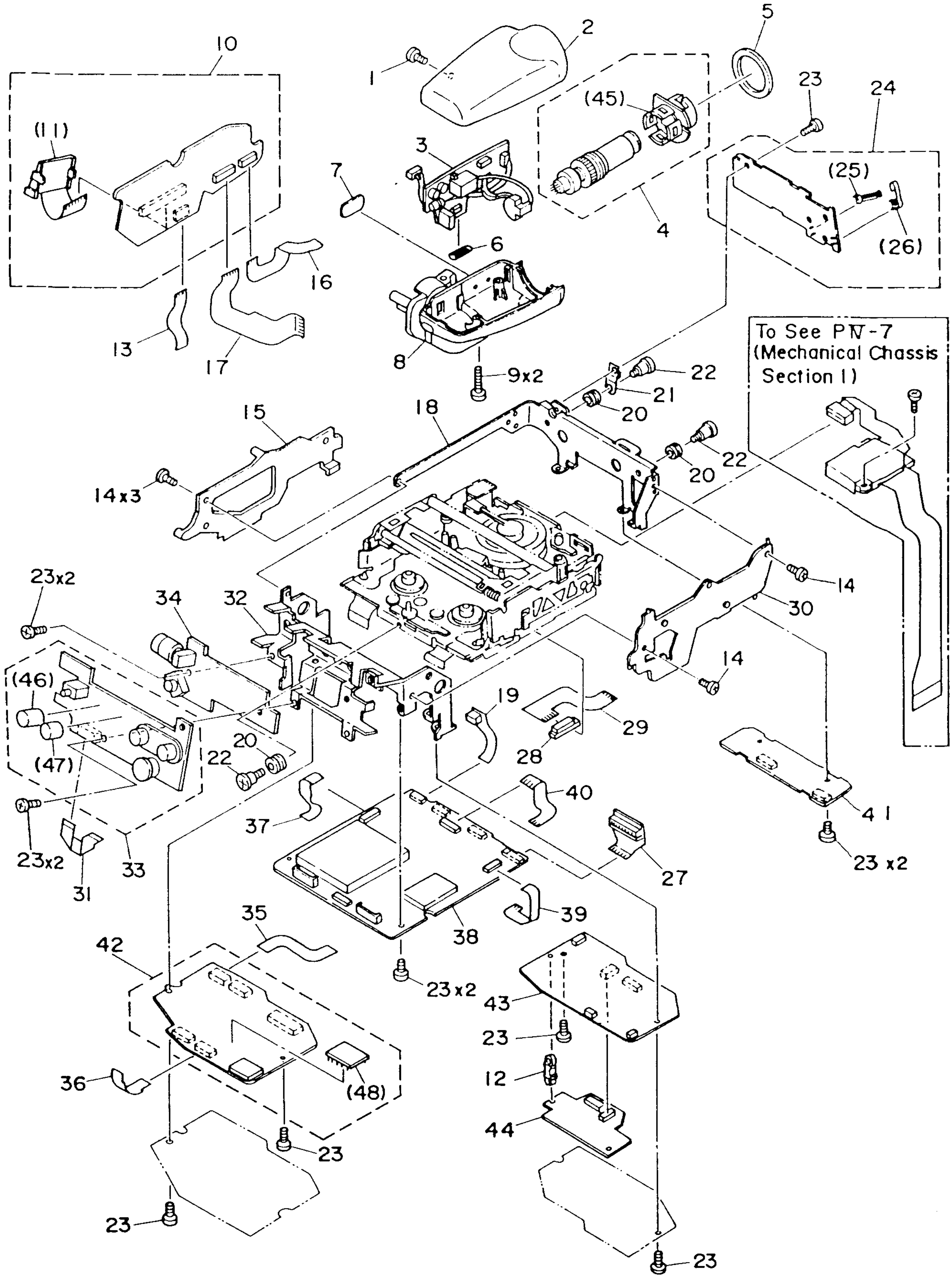
MECHANICAL PARTS

SYMBOL	PART NO.	CLASS	QTY	DESCRIPTION	REMARKS
1	XA4-6200-359 000	F	1	SCREW, CROSS-RECESS, FCH	
2	DG1-1404-000 000	C	1	CAMERA KEY (2) P.C.B.	
3	XA4-9200-509 000	F	7	SCREW, CROSS-RECESS, PH	
4	DG1-2268-000 000	C	1	AF P.C.B.	
5	DA1-4294-000 000	C	1	HOLDER (1), CAMERA	
6	DA1-4296-000 000	C	1	HOLDER, CAMERA-KEY (2)	
7	XA4-6200-707 000	F	6	SCREW, CROSS-RECESS, FCH	
8	DA1-4285-000 000	B	1	MOUNT, CAMERA	
9	DA1-4286-000 000	C	1	SPRING, MOUNT	
10	DA1-4300-000 000	C	1	SCREW, CROSS-RECESS	
11	DA1-4293-000 000	C	1	SWITCH LEVER	
12	DS1-5236-000 000	C	1	SPRING, COIL (1)	
13	DA1-4287-000 000	C	1	LOCK PIN, CAMERA	
14	DA1-4288-000 000	C	1	LOCK LEVER, CAMERA	
15	DA1-4290-000 000	C	1	HOLD, LEVER	
16	DS1-5238-000 000	C	1	SPRING, COIL (3)	
17	DA1-4289-000 000	C	1	GUIDE, LEVER	
18	DY1-7503-000 000	B	1	CONTACT ASS'Y	
19	XA4-9200-609 000	F	8	SCREW, CROSS-RECESS, PH	
20	DS1-5235-000 000	C	3	SPRING, COIL	
21	DY1-7514-000 000	C	1	CCD ASS'Y	
22	DH9-0515-000 000	C	1	ACTUATOR	
23	DH9-0537-000 000	C	1	CRYSTAL FILTER	
24	DA1-4356-000 000	C	1	SEAL, RUBBER	
25	DH2-1549-000 000	C	1	FPC, CCD ASS'Y	
26	XA4-6201-209 000	F	3	SCREW, CROSS-RECESS, FCH	
27	DA1-4279-000 000	C	1	RING, ADJUST	
28	DA1-4276-000 000	C	1	BASE, CAMERA	
29	DA1-5359-000 000	C	1	HOLDER, PLATE	
30	DA1-4295-000 000	C	1	HOLDER (2), CAMERA	
31	DG1-2230-000 000	C	1	CAMERA KEY (1) P.C.B.	
32	DG1-2266-000 000	C	1	PROCESS (1) P.C.B.	
33	DG1-2267-000 000	C	1	PROCESS (2) P.C.B.	
34	DH4-0603-000 000	C	1	ENCODER P.C.B.	
35	DH4-0272-000 000	C	1	MATRIX P.C.B.	
36	DH3-0017-000 000	C	1	DC/DC CONVERTER	
37	XA4-9170-409 000	F	2	SCREW, CROSS-RECESS, PH	

EVF / Recorder Unit Section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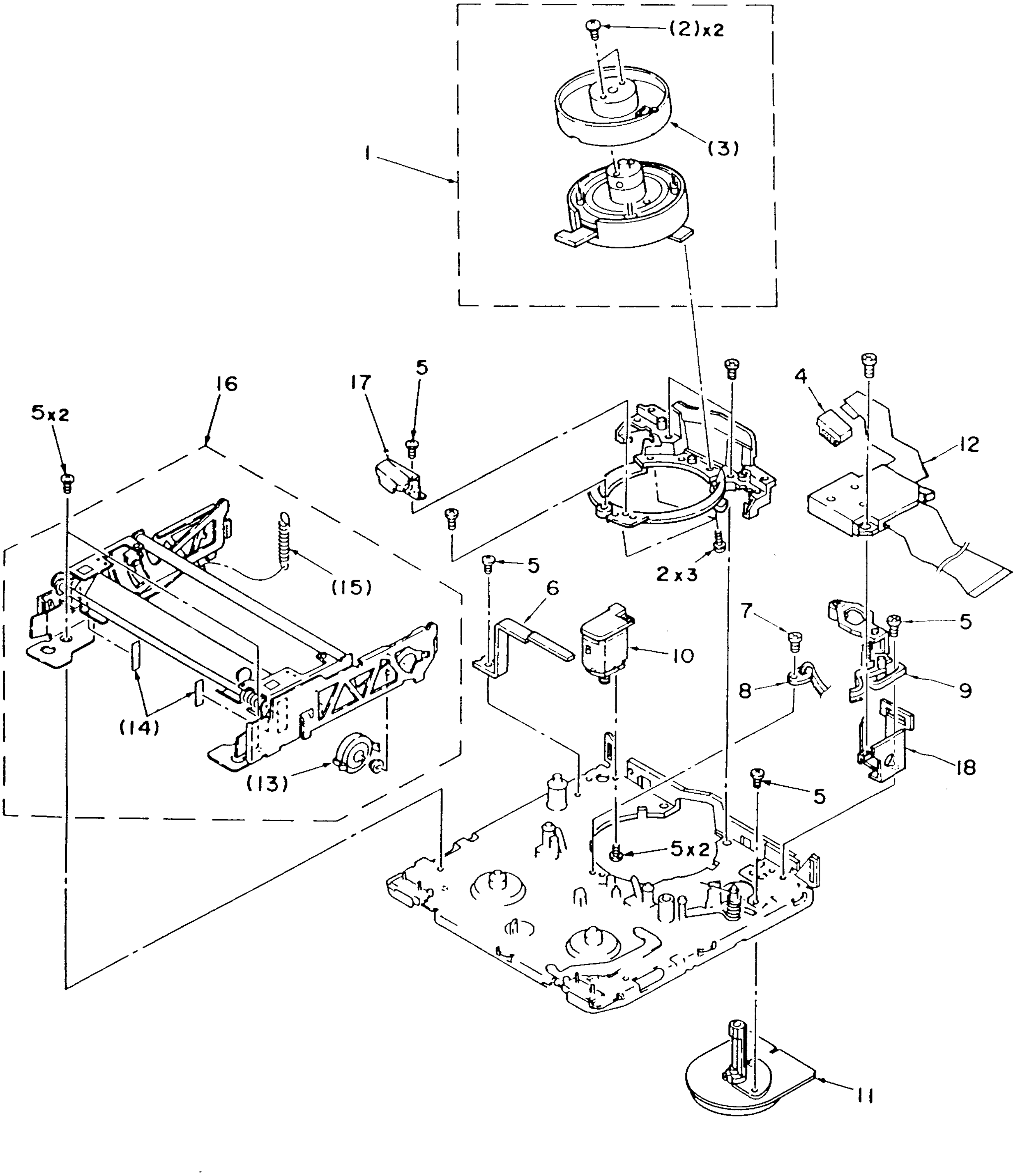
MECHANICAL PARTS

SYMBOL	PART NO.	CLASS	QTY	DESCRIPTION	REMARKS
1	XA9-0682-000 000	F	1	SCREW, CROSS-RECESS, PH	
2	DY2-1288-000 000	B	1	TOP COVER, E.V.F.	
3	DY2-1316-000 000	C	1	E.V.F. P.C.B.	
4	DY2-1291-000 000	C	1	CRT ASS'Y	
5	DA1-1864-000 000	B	1	RING, RUBBER	
6	DA1-3857-000 000	B	1	SLIDE SWITCH, E.V.F.	
7	DA1-1677-000 000	B	1	PLATE, COVER	
8	DY1-7504-000 000	B	1	BOTTOM COVER, E.V.F.	
9	XB4-6201-609 000	F	2	SCREW, CROSS-RECESS	
10	DG1-2264-000 000	C	1	RECORDER KEY (1) P.C.B.	
11	DY1-7505-000 000	C	1	LCD ASS'Y	
12	DA1-3764-000 000	C	1	HOLDER, P.C.B.	
13	DH2-1318-000 000	C	1	PRINTED CORD	
14	XA9-0484-000 000	F	5	SCREW, CROSS-RECESS, FCH	
15	DA1-4338-000 000	C	1	HOLDER (1), RECORDER	
16	DH2-1309-000 000	C	1	PRINTED CORD	
17	DH2-1307-000 000	C	1	PRINTED CORD	
18	DA1-3754-000 000	C	1	HOLDER (4), RECORDER	
19	DF1-0778-000 000	C	1	PRINTED CORD ASS'Y	
20	DA1-3765-000 000	C	3	MECHA. DAMPER	
21	DA1-3756-000 000	C	1	PLATE, GROUND	
22	DA1-3755-000 000	F	3	SCREW, CROSS-RECESS	
23	XA1-7200-307 000	F	13	SCREW, CROSS-RECESS, PH	
24	DG1-1381-000 000	C	1	RECORDER KEY (2) P.C.B.	
25	DA1-3763-000 000	C	1	TERMINAL (2), LITHIUM BATTERY	
26	DA1-3762-000 000	C	1	TERMINAL (1), LITHIUM BATTERY	
27	DF1-0541-000 000	C	1	PRINTED CORD ASS'Y	
28	DH2-1250-000 000	C	1	CONNECTOR 11P	
29	DH2-1301-000 000	C	1	PRINTED CORD	
30	DA1-3752-000 000	C	1	HOLDER (2), RECORDER	
31	DH2-1547-000 000	C	1	PRINTED CORD	
32	DF1-1010-000 000	C	1	HOLDER (3), RECORDER	
33	DG1-2225-000 000	C	1	TERMINAL P.C.B.	
34	DG1-1382-000 000	C	1	HEAD PHONE P.C.B.	
35	DH2-1308-000 000	C	1	PRINTED CORD	
36	DH2-1541-000 000	C	1	PRINTED CORD	
37	DH2-1304-000 000	C	1	PRINTED CORD	
38	DG1-2263-000 000	C	1	SYSCON SERVO P.C.B.	
39	DH2-1306-000 000	C	1	PRINTED CORD	
40	DH2-1305-000 000	C	1	PRINTED CORD	
41	DG1-2235-000 000	C	1	VIDEO SUB P.C.B.	
42	DG1-2262-000 000	C	1	VIDEO P.C.B.	
43	DY1-7264-000 000	C	1	AUDIO (1) P.C.B.	
44	DY1-7265-000 000	C	1	AUDIO (2) P.C.B.	
45	DA1-2164-000 000	C	1	MASK, CRT	
46	WS6-0104-000 000	C	1	JACK, PIN (WHITE)	
47	WS6-0105-000 000	C	1	JACK, PIN (RED)	
48	DH4-0301-000 000	B	1	JOG P.C.B.	

Mechanical Chassis Section I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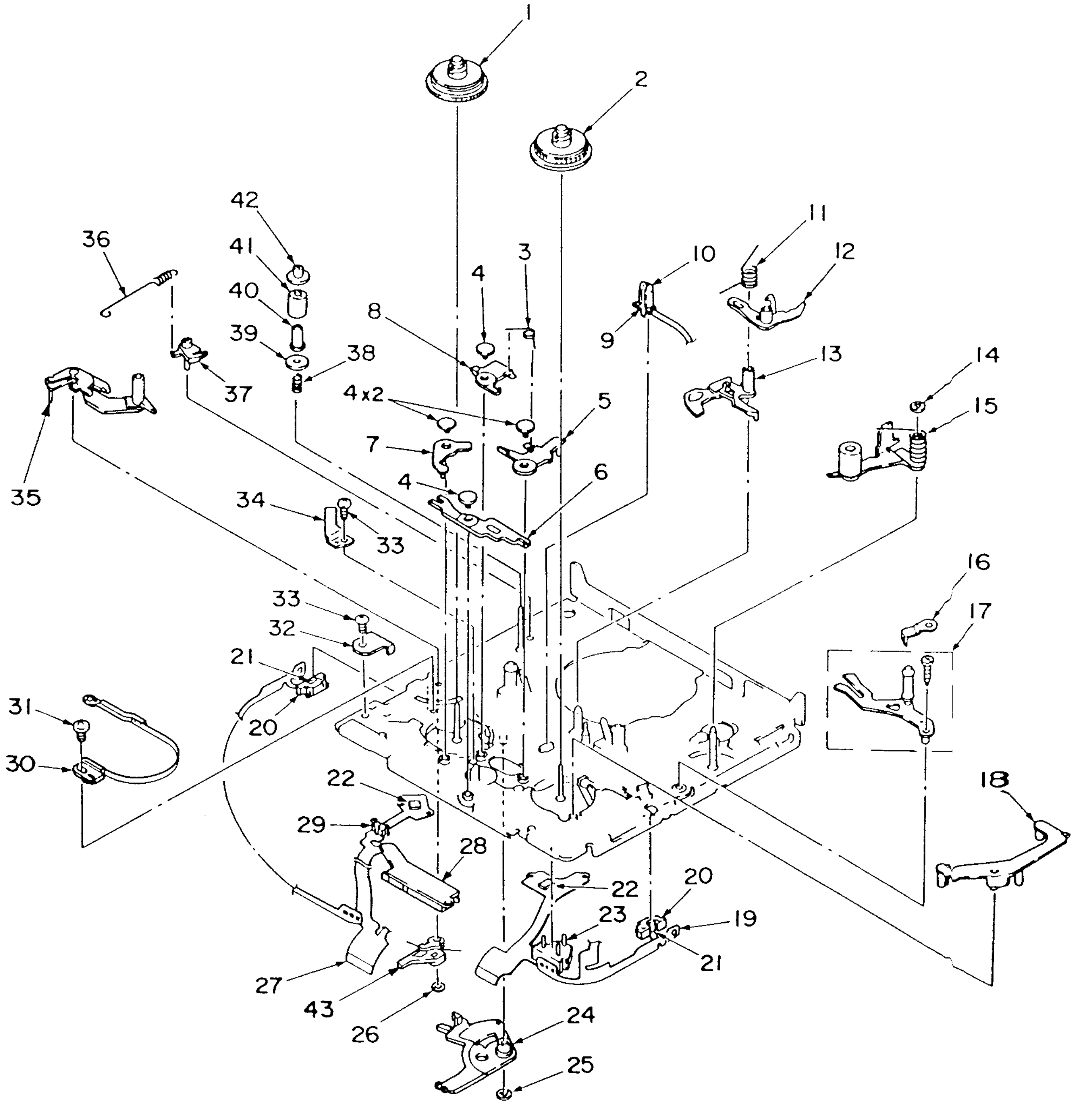
MECHANICAL PARTS

SYMBOL	PART NO.	CLASS	QTY	DESCRIPTION	REMARKS
1	DY4-2936-000 000	E	1	DRUM ASS'Y	
2	DY4-2730-000 000	F	5	SCREW, CROSS-RECESS	
3	DY4-2937-000 000	E	1	UPPER DRUM ASS'Y	
4	DY4-2920-000 000	C	1	CONNECTOR 13P	
5	DY4-2727-000 000	F	8	SCREW, CROSS-RECESS	
6	DY4-2675-000 000	C	1	TERMINAL, EARTH	
7	DY4-2728-000 000	F	1	SCREW, CROSS-RECESS	
8	Y22-8120-000 000	B	1	SENSOR, DEW	
9	DY4-2910-000 000	C	1	ROLLER ASS'Y	
10	DY4-2911-000 000	C	1	LOADING MOTOR ASS'Y	
11	DY4-2726-000 000	C	1	CAPSTAN MOTOR	
12	DY4-3091-000 000	C	1	HEAD AMP ASS'Y	
13	DY4-2720-000 000	C	1	DAMPER, OIL	
14	DY4-2729-000 000	C	2	TAPE	
15	DY4-2708-000 000	C	1	SPRING, COIL	
16	DY4-2673-000 000	C	1	CASSETTE COMPARTMENT ASS'Y	
17	DY4-2721-000 000	C	1	GUARD, GUIDE	
18	DY4-2925-000 000	C	1	HOLDER	

Mechanical Chassis Section 2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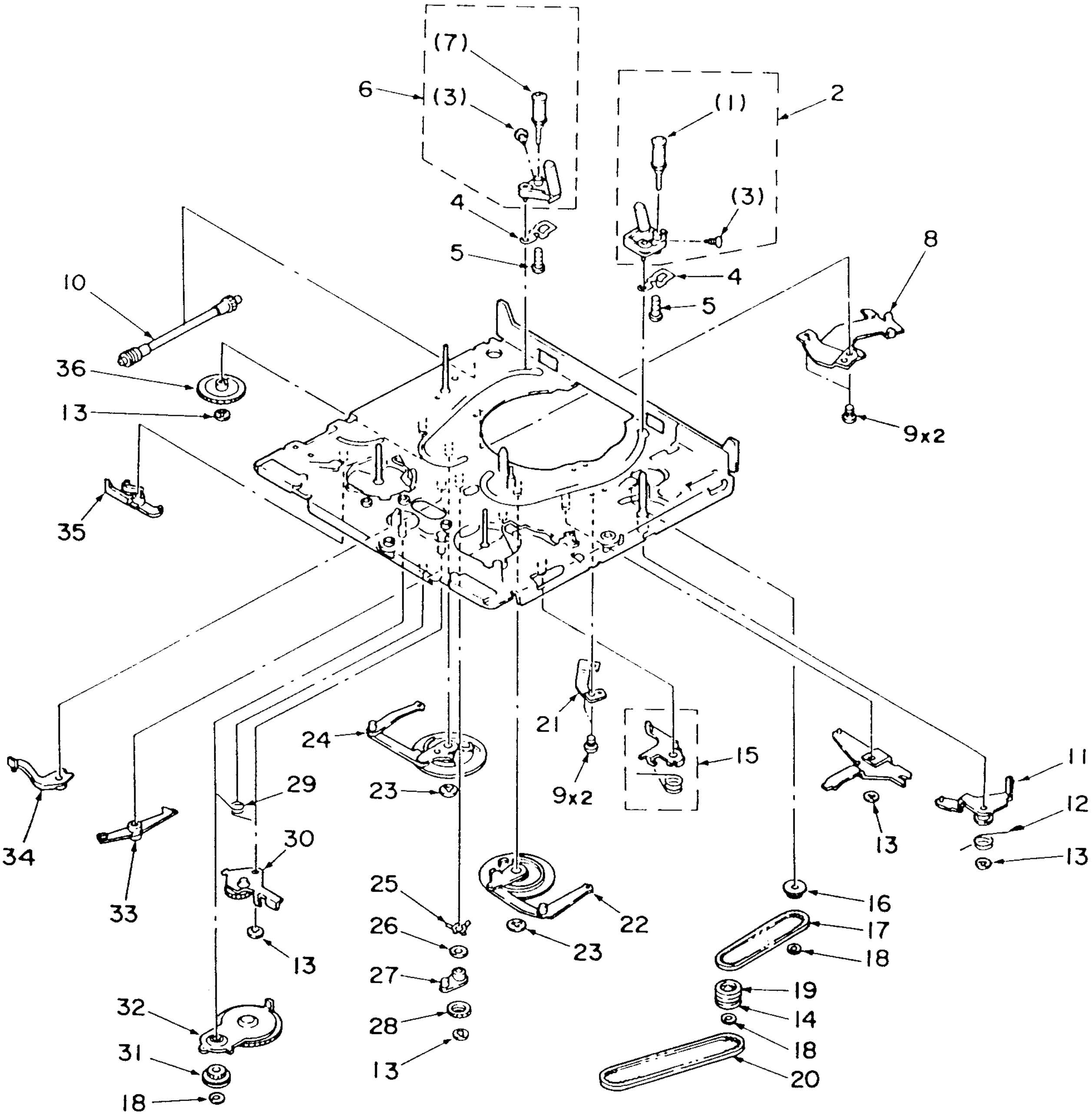
MECHANICAL PARTS

SYMBOL	PART NO.	CLASS	QTY	DESCRIPTION	REMARKS
1	DY4-2663-000 000	C	1	REEL, SUPPLY	
2	DY4-2666-000 000	C	1	REEL, TAKE UP	
3	DY4-2699-000 000	C	1	SPRING, COIL	
4	DY4-2696-000 000	C	4	PIN, SHAFT	
5	DY4-2714-000 000	C	1	BRAKE, T	
6	DY4-2692-000 000	C	1	LEVER, LB	
7	DY4-2691-000 000	C	1	BRAKE, LB	
8	DY4-2713-000 000	C	1	BRAKE, S	
9	DY4-2710-000 000	C	1	HOLDER, LED	
10	Y22-8012-000 000	B	1	LED GL452S	
11	DY4-2697-000 000	C	1	SPRING, COIL	
12	DY4-2716-000 000	C	1	ARM, STOPPER	
13	DY4-2723-000 000	C	1	STOPPER, RK	
14	DY4-2440-000 000	F	1	WASHER	
15	DY4-2912-000 000	C	1	ARM, PINCH	
16	DY4-2707-000 000	C	1	SPRING, PLATE	
17	DY4-2664-000 000	C	1	ARM, TG7	
18	DY4-2712-000 000	C	1	ARM, RELEASE	
19	DY4-2680-000 000	C	1	FLEXIBLE P.C.B. (2)	
20	DY4-2722-000 000	C	2	HOLDER, SENSOR	
21	Y22-8123-000 000	B	2	PHOTO TRANSISTOR EE-TP109	
22	Y22-8121-000 000	B	2	PHOTO IC SPI-315-25-CD	
23	DY4-2678-000 000	C	1	SWITCH, PUSH	
24	DY4-2917-000 000	C	1	LEVER, SWITCH	
25	DY4-2688-000 000	F	1	WASHER	
26	DY4-2681-000 000	F	1	WASHER	
27	DY4-2679-000 000	C	1	FLEXIBLE P.C.B. (1)	
28	DY4-2921-000 000	C	1	SWITCH, SLIDE	
29	DY4-2676-000 000	C	1	SWITCH	
30	DY4-2660-000 000	C	1	BAND, TENSION	
31	DY4-2727-000 000	F	1	SCREW, CROSS-RECESS	
32	DY4-2725-000 000	C	1	PLATE, SWITCH	
33	DY4-2728-000 000	F	2	SCREW, CROSS-RECESS	
34	DY4-2690-000 000	C	1	PLATE, TL	
35	DY4-2669-000 000	C	1	ARM	
36	DY4-2724-000 000	C	1	SPRING, COIL	
37	DY4-2717-000 000	C	1	ARM, ADJUST	
38	DY4-2705-000 000	C	1	SPRING, COIL	
39	DY4-2701-000 000	C	1	FLANGE, TG2	
40	DY4-2704-000 000	C	1	SLEEVE, TG2	
41	DY4-2702-000 000	C	1	ROLLER, TG2	
42	DY4-2703-000 000	C	1	FLANGE, TG2	
43	DY4-2914-000 000	C	1	STOPPER	

Mechanical Chassis Section 3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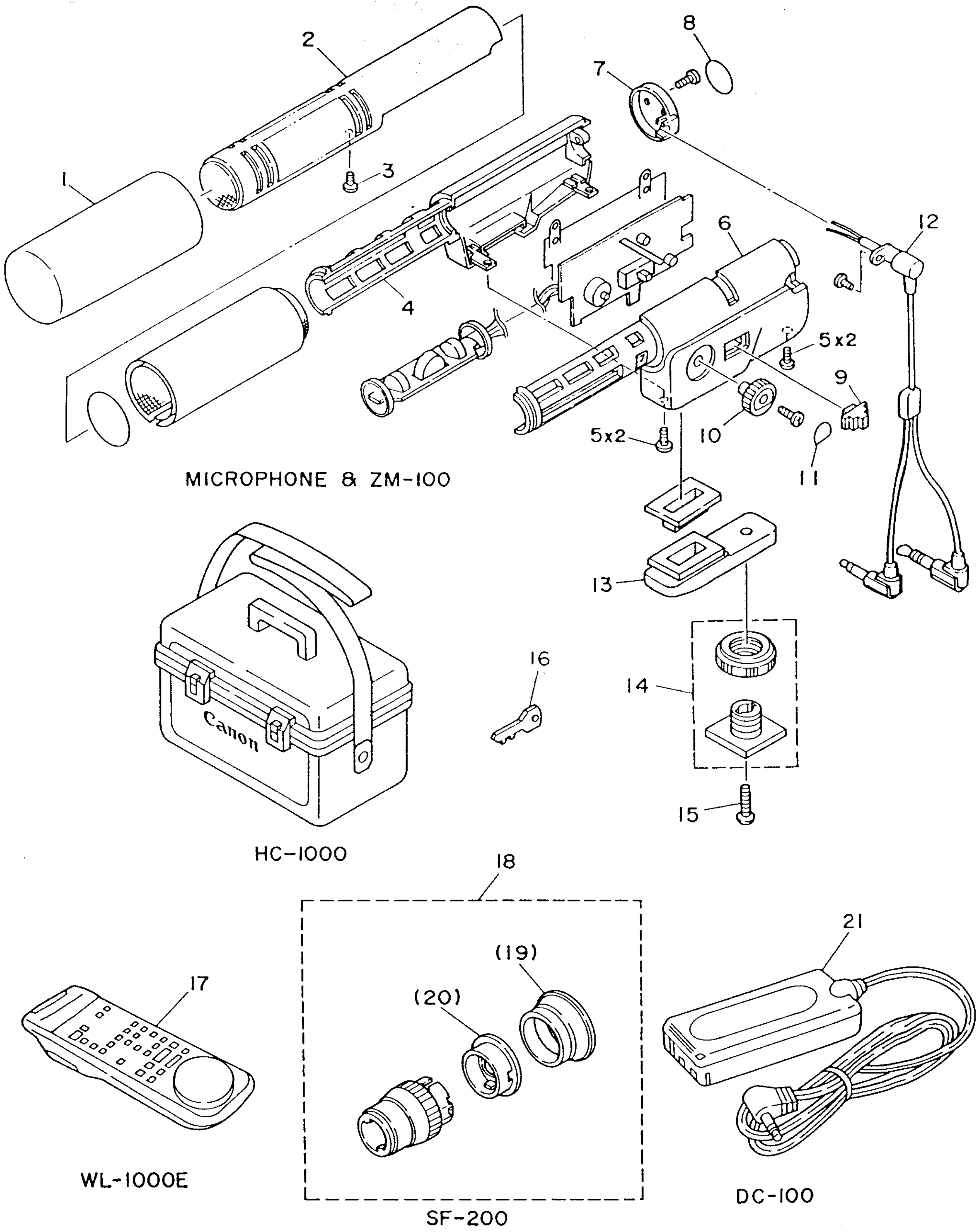
MECHANICAL PARTS

SYMBOL	PART NO.	CLASS	QTY	DESCRIPTION	REMARKS
1	DY4-2674-000 000	C	1	ROLLER, GUIDE	
2	DY4-2649-000 000	C	1	COASTER, RIGHT	
3	DY4-2686-000 000	F	2	SCREW, CROSS-RECESS	
4	DY4-2685-000 000	C	2	SPRING, LEAF	
5	DY4-2689-000 000	F	2	SCREW, CROSS-RECESS	
6	DY4-2648-000 000	C	1	COASTER, LEFT	
7	DY4-2662-000 000	C	1	ROLLER, GUIDE	
8	DY4-2672-000 000	C	1	PLATE, SS	
9	DY4-2728-000 000	F	4	SCREW, CROSS-RECESS	
10	DY4-2919-000 000	C	1	WORM ASS'Y	
11	DY4-2665-000 000	C	1	ARM, PINCH SUB	
12	DY4-2706-000 000	C	1	SPRING, COIL	
13	DY4-2688-000 000	F	5	WASHER	
14	DY4-2922-000 000	C	1	PULLEY, RELAY B	
15	DY4-2659-000 000	C	1	BRAKE, TS	
16	DY4-2656-000 000	C	1	GEAR, JOINT	
17	DY4-2719-000 000	E	1	BELT(S), TIMING	
18	DY4-2681-000 000	F	3	WASHER	
19	DY4-3004-000 000	C	1	PULLEY, RELAY A	
20	DY4-2923-000 000	C	1	BELT(L), TIMING	
21	DY4-2684-000 000	C	1	PLATE, TT	
22	DY4-2743-000 000	C	1	GEAR	
23	DY4-2440-000 000	F	2	WASHER	
24	DY4-2742-000 000	C	1	GEAR	
25	DY4-2700-000 000	C	1	SPRING	
26	DY4-2527-000 000	F	1	WASHER	
27	DY4-2695-000 000	C	1	ARM, UL	
28	DY4-2694-000 000	C	1	GEAR, UL	
29	DY4-2698-000 000	C	1	SPRING, COIL	
30	DY4-2650-000 000	C	1	GEAR ASS'Y	
31	DY4-2915-000 000	C	1	GEAR, RC	
32	DY4-2918-000 000	C	1	GEAR, RK	
33	DY4-2693-000 000	C	1	ARM, RELEASE	
34	DY4-2715-000 000	C	1	BRAKE, UL	
35	DY4-2711-000 000	C	1	LEVER, EJECT	
36	DY4-2924-000 000	C	1	GEAR, WHEEL	

Accessory Parts Section



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Canon
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HC-1000
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WL-1000E
DC-100
SF-200

MECHANICAL PARTS

SYMBOL	PART NO.	CLASS	QTY	DESCRIPTION	REMARKS
1	DY4-2964-010 000	B	1	WIND SCREEN	
2	DY4-2977-000 000	B	1	COVER, TOP	
3	DY4-2965-000 000	F	1	SCREW, CROSS-RECESS	
4	DY4-2976-000 000	B	1	COVER, LEFT	
5	DY4-2966-000 000	F	4	SCREW, CROSS-RECESS	
6	DY4-2975-000 000	B	1	COVER, RIGHT	
7	DY4-2974-000 000	B	1	COVER, REAR	
8	DY4-2969-000 000	B	1	PLATE, NAME	
9	DY4-2971-000 000	B	1	KNOB	
10	DY4-2972-000 000	B	1	KNOB	
11	DY4-2970-000 000	B	1	PLATE, NAME	
12	DY4-2968-000 000	B	1	CORD, STRAIGHT W/PLUG	
	DY4-2963-000 000	B	1	CORD, CURLED W/PLUG	ZM-100 ONLY
13	DY4-2973-000 000	B	1	HOLDER, MIC	
14	DY4-2962-000 000	C	1	SHOE, ACCESSORY	
15	DY4-2967-000 000	F	1	SCREW, CROSS-RECESS	
16	DY4-4386-000 000	C	1	KEY, HARD CASE	
17	DY1-7516-000 000	B	1	WIRELESS REMOTE CONTROLLER WL-1000E	
18	DY2-1223-000 000	B	1	SPORTS FINDER SF-200	
19	DA1-4051-000 000	C	1	EYE CUP	
20	DA1-4054-000 000	C	1	MASK, EYEPIECE	
21	DY2-1347-000 000	B	1	COUPLER, DC-100	

ELECTRICAL PARTS

	SYMBOL	PART NO.	CLASS	QTY	DESCRIPTION	REMARKS
⚠	C2911	VC6-4130-106 000	D	1	CAPACITOR, AL/EL 10µF/16V	
⚠	C2915	VC7-1360-102 000	D	1	CAPACITOR, CERA 1000pF/1KV	
⚠	C2917	VC7-1380-152 000	D	1	CAPACITOR, CERA 1500pF/500V	
	CN001	VS1-5256-012 000	C	1	CONNECTOR 12P	
	CN002	VS1-5051-008 000	C	1	CONNECTOR 8P	
	CN006	VS1-5256-020 000	C	1	CONNECTOR 20P	
	CN007	VS1-1169-028 000	C	1	CONNECTOR 28P	
	CN100	VS1-1169-010 000	C	1	CONNECTOR 10P	
	CN101	VS1-1169-015 000	C	1	CONNECTOR 15P	
	CN102	VS1-5256-016 000	C	1	CONNECTOR 16P	
	CN201	VS1-1169-008 000	C	1	CONNECTOR 8P	
	CN202	VS1-5149-008 000	C	1	CONNECTOR 8P	
	CN203/CN2307/ CN2511	DH2-1398-000 000	C	1	CONNECTOR ASS'Y, 7P	
	CN204	VS1-5256-024 000	C	1	CONNECTOR 24P	
	CN205	VS1-5256-024 000	C	1	CONNECTOR 24P	
	CN206	VS1-1169-022 000	C	1	CONNECTOR 22P	
	CN207	VS1-5256-012 000	C	1	CONNECTOR 12P	
	CN702	VS1-5106-014 000	C	1	CONNECTOR 14P	
	CN901/CN1301	DH2-1392-000 000	C	1	CONNECTOR CABLE ASS'Y	
	CN904	VS1-5105-010 000	C	1	CONNECTOR 10P	
	CN905	VS1-5256-016 000	C	1	CONNECTOR 16P	
	CN907/CN1303	DH2-1391-000 000	C	1	CONNECTOR CABLE ASS'Y	
	CN1401	VS1-5149-008 000	C	1	CONNECTOR 8P	
	CN1501	VS1-5256-024 000	C	1	CONNECTOR 24P	
	CN1601	VS1-1169-005 000	C	1	CONNECTOR 5P	
	CN1603	VS1-5256-024 000	C	1	CONNECTOR 24P	
	CN1604	VS1-5256-016 000	C	1	CONNECTOR 16P	
	CN1606	VS1-0876-013 000	C	1	CONNECTOR 13P	
	CN1607	VS1-5256-020 000	C	1	CONNECTOR 20P	
	CN1608	VS1-0876-011 000	C	1	CONNECTOR 11P	
	CN1701	VS1-5256-012 000	C	1	CONNECTOR 12P	
	CN1702	VS1-5256-016 000	C	1	CONNECTOR 16P	
	CN1801	VS1-5106-010 000	C	1	CONNECTOR 10P	
	CN1901	VS1-5256-012 000	C	1	CONNECTOR 12P	
	CN2101	VS1-1169-020 000	C	1	CONNECTOR 20P	
	CN2102	VS1-5108-010 000	C	1	CONNECTOR 10P	
	CN2103	VS1-5184-020 000	C	1	CONNECTOR 20P	
	CN2104	VS1-5184-020 000	C	1	CONNECTOR 20P	
	CN2301	VS1-5106-020 000	C	1	CONNECTOR 20P	
	CN2302	VS1-5106-020 000	C	1	CONNECTOR 20P	
	CN2303	VS1-5108-014 000	C	1	CONNECTOR 14P	
	CN2304	VS1-5108-014 000	C	1	CONNECTOR 14P	
	CN2502	VS1-1021-008 000	C	1	CONNECTOR 8P	
	CN2503	VS1-5106-014 000	C	1	CONNECTOR 14P	
	CN2504	VS1-5106-010 000	C	1	CONNECTOR 10P	
	D001	WA1-1146-000 000	B	1	DIODE MA707	
	D004	WA1-1084-000 000	B	1	DIODE MA110	
	D005	WA1-0962-000 000	B	1	DIODE MA121	
	D006	WA1-0617-000 000	B	1	ZENER DIODE, MA3100	
	D100	WA1-1084-000 000	B	1	DIODE MA110	
	D101	WA1-5080-000 000	B	1	DIODE EC10QS03	
	D102	WA1-5080-000 000	B	1	DIODE EC10QS03	
	D103	WA1-1084-000 000	B	1	DIODE MA110	
	D302	WA1-1084-000 000	B	1	DIODE MA110	
	D303	WA1-1084-000 000	B	1	DIODE MA110	
	D304	WA1-1084-000 000	B	1	DIODE MA110	
	D305	WA1-1164-000 000	B	1	DIODE DAN202U	
	D306	WA1-1084-000 000	B	1	DIODE MA110	
	D307	WA1-1084-000 000	B	1	DIODE MA110	

ELECTRICAL PARTS

SYMBOL	PART NO.	CLASS	QTY	DESCRIPTION	REMARKS
D308	WA1-1084-000 000	B	1	DIODE MA110	
D309	WA1-1084-000 000	B	1	DIODE MA110	
D310	WA1-1084-000 000	B	1	DIODE MA110	
D1601	WA1-1084-000 000	B	1	DIODE MA110	
D1602	WA1-1084-000 000	B	1	DIODE MA110	
D1603	WA1-1084-000 000	B	1	DIODE MA110	
D1604	WA1-1164-000 000	B	1	DIODE DAN202U	
D1605	WA1-1084-000 000	B	1	DIODE MA110	
D1701	WA1-1084-000 000	B	1	DIODE MA110	
D2501	WA1-5061-000 000	B	1	DIODE DAP202U	
D2502	WA1-1084-000 000	B	1	DIODE MA110	
D2503	WA1-1149-000 000	B	1	CHIP DIODE, 1SS250	
D2504	WA1-1149-000 000	B	1	CHIP DIODE, 1SS250	
D2505	WA1-0963-000 000	B	1	DIODE, ZENER MA3A100	
D2506	WA1-0963-000 000	B	1	DIODE, ZENER MA3A100	
D2901	WA1-0989-000 000	B	1	DIODE, ZENER MA3100W	
D2902	WA1-1084-000 000	B	1	DIODE MA110	
D2903	WA1-1084-000 000	B	1	DIODE MA110	
D2904	WA1-1123-000 000	B	1	DIODE AG01Z	
IC001	DH4-0641-001 000	B	1	IC ATT75312GF-247	
IC002	WA3-7051-000 000	B	1	IC S8420AF	
IC003	WA3-5455-000 000	B	1	IC SC7SU04F	
IC004	WA3-5455-000 000	B	1	IC SC7SU04F	
IC100	DH4-0318-000 000	B	1	IC CAX1127AM	
IC101	WA4-5919-000 000	B	1	IC CXA8006BM	
IC102	WA4-5161-000 000	B	1	IC CXA1512M	
IC103	WA3-6755-000 000	B	1	IC MC74HC165FL2	
IC104	DH4-0613-001 000	B	1	IC CXP80620-135Q	
IC201	DH4-0514-000 000	B	1	IC CXA1207AR	
IC202	DH4-0264-000 000	B	1	IC CXA1208R	
IC204	DH4-0297-000 000	B	1	IC CXL1506	
IC205	DH4-0297-000 000	B	1	IC CXL1506	
IC206	DH4-0411-000 000	B	1	IC MM1058XF	
IC207	WA4-5406-000 000	B	1	IC NJM2284M	
IC208	WA4-5476-000 000	B	1	IC NJM2508M	
IC212	DH4-0539-000 000	B	1	IC μPD6456GS-102	
IC213	DH4-0539-000 000	B	1	IC μPD6456GS-102	
IC214	WA4-5476-000 000	B	1	IC NJM2508M	
IC215	WA3-5156-000 000	B	1	IC TC74HC32AF	
IC301	WA4-5437-000 000	B	1	IC LVC556FA2	
IC303	DH4-0508-000 000	B	1	IC MM1024AF	
IC1501	WA4-5437-000 000	B	1	IC LVC556FA2	
IC1502	DH4-0327-000 000	B	1	IC CXD1171M	
IC1503	DH4-0322-000 000	B	1	IC CXD1175AM	
IC1504	WA4-1332-000 000	B	1	IC NJM2406F	
IC1505	DH4-0321-000 000	B	1	IC CXD1172AM	
IC1506	DH4-0325-000 000	B	1	IC CF38403PJ	
IC1507	DH4-0326-000 000	B	1	IC CF78125PJ	
IC1508	WA3-5548-000 000	B	1	IC TMS4C1050-40DJ	
IC1509	DH4-0526-000 000	B	1	IC CF45010DW	
IC1510	WA3-5201-000 000	B	1	IC MN3106S	
IC1601	DH4-0614-000 000	B	1	IC CXP81316-337Q	
IC1602	WA4-5437-000 000	B	1	IC LVC556FA2	
IC1603	WA3-6860-000 000	B	1	IC NM93C06EM8	
IC1604	WA4-5470-000 000	B	1	IC TL1596CDB	
IC1605	WA4-1145-000 000	B	1	IC RH5VA45AA	
IC1606	WA4-5422-000 000	B	1	IC S-81350HG	
IC1607	WA4-1145-000 000	B	1	IC RH5VA45AA	
IC1701	WA4-5557-000 000	B	1	IC CX20102	
IC1702	WA4-5164-000 000	B	1	IC μPC393G2	

ELECTRICAL PARTS

SYMBOL	PART NO.	CLASS	QTY	DESCRIPTION	REMARKS
IC1703	WA3-6393-000 000	B	1	IC CXD2120Q	
IC2501	DH4-0281-000 000	B	1	IC LD5077	
IC2502	WA3-5323-000 000	B	1	IC MB625184UPF	
IC2503	DH4-0314-000 000	B	1	IC M37450M4-502FP	
IC2504	WA3-4264-000 000	B	1	IC SC14S66F	
IC2505	WA4-1293-000 000	B	1	IC PST529CMT	
IC2506	WA3-3965-000 000	B	1	IC SN74HC05NS	
IC2507	WA4-5213-000 000	B	1	IC RH5RE50AA	
IC2508	WA3-4264-000 000	B	1	IC SC14S66F	
IC2509	WA4-1172-000 000	B	1	IC NJM3415M	
IC2510	WA3-5173-000 000	B	1	IC SC7S00F	
IC2511	WA3-5173-000 000	B	1	IC SC7S00F	
IC2512	WA3-5173-000 000	B	1	IC SC7S00F	
IC2513	WA3-4264-000 000	B	1	IC SC14S66F	
IC2514	WA3-5678-000 000	B	1	IC MC74HC164FL2	
IC2515	WA3-4264-000 000	B	1	IC SC14S66F	
IC2516	WA3-4264-000 000	B	1	IC SC14S66F	
IC2517	WA3-5678-000 000	B	1	IC MC74HC164FL2	
IC2901	WA4-1322-000 000	B	1	IC AN2514S	
IC2931	DH4-0205-000 000	B	1	IC LVC556F-2	
L1201	DH9-0405-000 000	C	1	COIL, FERRITE 2μH	
⚠ L2902	DH9-0512-000 000	D	1	COIL, 210μH	
LED2941	WG1-0417-000 000	B	1	LED SLH-56VT144F	
Q001	WA2-1400-000 000	B	1	TRANSISTOR 2SA1576	
Q002	WA2-5588-000 000	B	1	TRANSISTOR XDIMB6	
Q004	WA2-5615-000 000	B	1	TRANSISTOR XDC144EU	
Q005	WA2-5615-000 000	B	1	TRANSISTOR XDC144EU	
Q100	WA2-5122-000 000	B	1	TRANSISTOR FC101	
Q101	WA2-5587-000 000	B	1	TRANSISTOR XDIMD2	
Q102	WA2-0797-000 201	B	1	TRANSISTOR 2SA1213	
Q103	WA2-5589-000 000	B	1	TRANSISTOR XDIMH6	
Q104	WA2-5595-000 000	B	1	TRANSISTOR XDC144EE	
Q105	WA2-5590-000 000	B	1	TRANSISTOR XDIMH8	
Q106	WA2-5669-000 000	B	1	TRANSISTOR XDC114TE	
Q107	WA2-5590-000 000	B	1	TRANSISTOR XDIMH8	
Q108	WA2-5595-000 000	B	1	TRANSISTOR XDC144EE	
Q109	WA2-0797-000 201	B	1	TRANSISTOR 2SA1213	
Q110	WA2-5600-000 000	B	1	TRANSISTOR XDC114EE	
Q201	WA2-5590-000 000	B	1	TRANSISTOR XDIMH8	
Q203	WA2-1234-000 000	B	1	TRANSISTOR IMX2	
Q204	WA2-5589-000 000	B	1	TRANSISTOR XDIMH6	
Q205	WA2-5612-000 000	B	1	TRANSISTOR XDA144EU	
Q206	WA2-5347-000 000	B	1	TRANSISTOR RN2427	
Q207	WA2-5615-000 000	B	1	TRANSISTOR XDC144EU	
Q208	WA2-5589-000 000	B	1	TRANSISTOR XDIMH6	
Q209	WA2-5589-000 000	B	1	TRANSISTOR XDIMH6	
Q210	WA2-5612-000 000	B	1	TRANSISTOR XDA144EU	
Q211	WA2-5615-000 000	B	1	TRANSISTOR XDC144EU	
Q212	WA2-5589-000 000	B	1	TRANSISTOR XDIMH6	
Q213	WA2-1337-000 000	B	1	TRANSISTOR 2SC4081	
Q214	WA2-5606-000 000	B	1	TRANSISTOR 2SA1576	
Q254	WA2-1440-000 000	B	1	TRANSISTOR 2SA1576	
Q255	WA2-1234-000 000	B	1	TRANSISTOR IMX2	
Q256	WA2-1337-000 000	B	1	TRANSISTOR 2SC4081	
Q257	WA2-1400-000 000	B	1	TRANSISTOR 2SA1576	
Q302	WA2-1337-000 000	B	1	TRANSISTOR 2SC4081	
Q303	WA2-1228-000 000	B	1	TRANSISTOR IMT2	
Q305	WA2-1234-000 000	B	1	TRANSISTOR IMX2	
Q308	WA2-5092-000 000	B	1	TRANSISTOR IMX5	
Q313	WA2-1400-000 000	B	1	TRANSISTOR 2SA1576	

ELECTRICAL PARTS

SYMBOL	PART NO.	CLASS	QTY	DESCRIPTION	REMARKS
Q315	WA2-1400-000 000	B	1	TRANSISTOR 2SA1576	
Q316	WA2-1337-000 000	B	1	TRANSISTOR 2SC4081	
Q317	WA2-1337-000 000	B	1	TRANSISTOR 2SC4081	
Q318	WA2-1234-000 000	B	1	TRANSISTOR IMX2	
Q321	WA2-1234-000 000	B	1	TRANSISTOR IMX2	
Q323	WA2-5629-000 000	B	1	TRANSISTOR XDIMB5	
Q324	WA2-1234-000 000	B	1	TRANSISTOR IMX2	
Q326	WA2-1405-000 000	B	1	TRANSISTOR DTA124EU	
Q327	WA2-5587-000 000	B	1	TRANSISTOR XDIMD2	
Q328	WA2-5587-000 000	B	1	TRANSISTOR XDIMD2	
Q333	WA2-1337-000 000	B	1	TRANSISTOR 2SC4081	
Q334	WA2-5608-000 000	B	1	TRANSISTOR XDIMH5	
Q336	WA2-5149-000 000	B	1	TRANSISTOR 2SB1412F5	
Q337	WA2-5152-000 000	B	1	TRANSISTOR 2SB1424	
Q338	WA2-5615-000 000	B	1	TRANSISTOR XDC144EU	
Q340	WA2-1228-000 000	B	1	TRANSISTOR IMT2	
Q344	WA2-5615-000 000	B	1	TRANSISTOR XDC144EU	
Q346	WA2-5594-000 000	B	1	TRANSISTOR XDC124EU	
Q348	WA2-5615-000 000	B	1	TRANSISTOR XDC144EU	
Q351	WA2-1400-000 000	B	1	TRANSISTOR 2SA1576	
Q353	WA2-1405-000 000	B	1	TRANSISTOR XDA124EU	
Q360	WA2-1337-000 000	B	1	TRANSISTOR 2SC4081	
Q361	WA2-5615-000 000	B	1	TRANSISTOR XDC144EU	
Q370	WA2-5608-000 000	B	1	TRANSISTOR XDIMH5	
Q377	WA2-5587-000 000	B	1	TRANSISTOR XDIMD2	
Q378	WA2-5587-000 000	B	1	TRANSISTOR XDIMD2	
Q380	WA2-1337-000 000	B	1	TRANSISTOR 2SC4081	
Q381	WA2-1337-000 000	B	1	TRANSISTOR 2SC4081	
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Q385	WA2-1400-000 000	B	1	TRANSISTOR 2SA1576	
Q386	WA2-5587-000 000	B	1	TRANSISTOR XDIMD2	
Q387	WA2-5589-000 000	B	1	TRANSISTOR XDIMH6	
Q388	WA2-5168-000 000	B	1	FET, 2SK879	
Q389	WA2-1337-000 000	B	1	TRANSISTOR 2SC4081	
Q390	WA2-1232-000 000	B	1	TRANSISTOR IMZ1	
Q391	WA2-5615-000 000	B	1	TRANSISTOR XDC144EU	
Q392	WA2-1400-000 000	B	1	TRANSISTOR 2SA1576	
Q393	WA2-5615-000 000	B	1	TRANSISTOR XDC144EU	
Q395	WA2-1405-000 000	B	1	TRANSISTOR DTA124EU	
Q396	WA2-1232-000 000	B	1	TRANSISTOR IMZ1	
Q397	WA2-1228-000 000	B	1	TRANSISTOR IMT2	
Q450	WA2-5615-000 000	B	1	TRANSISTOR XDC144EU	
Q1501	WA2-5149-000 000	B	1	TRANSISTOR 2SB1412F5	
Q1502	WA2-5141-000 000	B	1	TRANSISTOR 2SA1774	
Q1503	WA2-5141-000 000	B	1	TRANSISTOR 2SA1774	
Q1504	WA2-1228-000 000	B	1	TRANSISTOR IMT2	
Q1505	WA2-1232-000 000	B	1	TRANSISTOR IMZ1	
Q1506	WA2-1228-000 000	B	1	TRANSISTOR IMT2	
Q1507	WA2-1232-000 000	B	1	TRANSISTOR IMZ1	
Q1508	WA2-5141-000 000	B	1	TRANSISTOR 2SA1774	
Q1509	WA2-5142-000 000	B	1	TRANSISTOR 2SC4617	
Q1510	WA2-5142-000 000	B	1	TRANSISTOR 2SC4617	
Q1511	WA2-1232-000 000	B	1	TRANSISTOR IMZ1	
Q1512	WA2-5142-000 000	B	1	TRANSISTOR 2SC4617	
Q1513	WA2-1234-000 000	B	1	TRANSISTOR IMX2	
Q1514	WA2-5142-000 000	B	1	TRANSISTOR 2SC4617	
Q1515	WA2-5141-000 000	B	1	TRANSISTOR 2SA1774	
Q1517	WA2-5142-000 000	B	1	TRANSISTOR 2SC4617	
Q1518	WA2-5142-000 000	B	1	TRANSISTOR 2SC4617	

ELECTRICAL PARTS

	SYMBOL	PART NO.	CLASS	QTY	DESCRIPTION	REMARKS
	Q1601	WA2-5590-000 000	B	1	TRANSISTOR XDIMH8	
	Q1602	WA2-5595-000 000	B	1	TRANSISTOR XDC144EE	
	Q1604	WA2-0797-000 201	B	1	TRANSISTOR 2SA1213	
	Q1608	WA2-5142-000 000	B	1	TRANSISTOR 2SC4617	
	Q1609	WA2-5595-000 000	B	1	TRANSISTOR XDC144EE	
	Q1611	WA2-5669-000 000	B	1	TRANSISTOR XDC114TE	
	Q1613	WA2-5614-000 000	B	1	TRANSISTOR XDC143EU	
	Q1614	WA2-5591-000 000	B	1	TRANSISTOR XDA124EE	
	Q1615	WA2-5590-000 000	B	1	TRANSISTOR XDIMH8	
	Q1616	WA2-1234-000 000	B	1	TRANSISTOR IMX2	
	Q1617	WA2-5590-000 000	B	1	TRANSISTOR XDIMH8	
	Q1618	WA2-1234-000 000	B	1	TRANSISTOR IMX2	
	Q1701	WA2-1234-000 000	B	1	TRANSISTOR IMX2	
	Q1702	WA2-5142-000 000	B	1	TRANSISTOR 2SC4617	
	Q1703	WA2-5142-000 000	B	1	TRANSISTOR 2SC4617	
	Q1704	WA2-1234-000 000	B	1	TRANSISTOR IMX2	
	Q1705	WA2-5142-000 000	B	1	TRANSISTOR 2SC4617	
	Q1706	WA2-5142-000 000	B	1	TRANSISTOR 2SC4617	
	Q1707	WA2-5142-000 000	B	1	TRANSISTOR 2SC4617	
	Q1708	WA2-5141-000 000	B	1	TRANSISTOR 2SA1774	
	Q1709	WA2-5141-000 000	B	1	TRANSISTOR 2SA1774	
	Q1710	WA2-1234-000 000	B	1	TRANSISTOR IMX2	
	Q1711	WA2-5142-000 000	B	1	TRANSISTOR 2SC4617	
	Q1712	WA2-5141-000 000	B	1	TRANSISTOR 2SA1774	
	Q1713	WA2-5142-000 000	B	1	TRANSISTOR 2SC4617	
	Q1714	WA2-5142-000 000	B	1	TRANSISTOR 2SC4617	
	Q1715	WA2-5142-000 000	B	1	TRANSISTOR 2SC4617	
	Q1716	WA2-5141-000 000	B	1	TRANSISTOR 2SA1774	
	Q1717	WA2-1234-000 000	B	1	TRANSISTOR IMX2	
	Q2501	WA2-1234-000 000	B	1	TRANSISTOR IMX2	
	Q2502	WA2-1234-000 000	B	1	TRANSISTOR IMX2	
	Q2503	WA2-1337-000 000	B	1	TRANSISTOR 2SC4081	
	Q2504	WA2-5152-000 000	B	1	TRANSISTOR 2SB1424	
	Q2505	WA2-5615-000 000	B	1	TRANSISTOR XDC144EU	
	Q2506	WA2-1351-000 000	B	1	TRANSISTOR IMD6	
	Q2507	WA2-1400-000 000	B	1	TRANSISTOR 2SA1576	
	Q2508	WA2-1398-000 000	B	1	TRANSISTOR 2SA1255	
	Q2509	WA2-1381-000 000	B	1	TRANSISTOR 2SC3138	
	Q2510	WA2-1337-000 000	B	1	TRANSISTOR 2SC4081	
	Q2901	WA2-0839-000 000	B	1	TRANSISTOR 2SA1226	
	Q2902	WA2-0393-000 201	B	1	TRANSISTOR 2SA1162	
	Q2903	WA2-0393-000 201	B	1	TRANSISTOR 2SA1162	
⚠	Q2904	WA2-5151-000 000	B	1	TRANSISTOR 2SD968A-S	
	Q2931	WA2-0797-000 201	B	1	TRANSISTOR 2SA1213	
	RE701	DH9-0572-000 000	C	1	ROTARY ENCODER	
⚠	RR801	DH4-0144-000 000	D	1	LINK, IC ICP-F25	
⚠	RR1201	WD8-5020-000 000	D	1	LINK, IC DCT2000	
⚠	RR1202	WD8-5020-000 000	D	1	LINK, IC DCT2000	
⚠	RR1203	WD8-5020-000 000	D	1	LINK, IC DCT2000	
⚠	RR2901	DH4-0141-000 000	D	1	LINK, IC ICP-N15	
	RU2941	DH9-0489-000 000	C	1	REMOCON MODULE	
	TC201	VC7-5750-300 000	C	1	CAPACITOR, TRIMMER 30pF	
	TC202	VC7-5750-300 000	C	1	CAPACITOR, TRIMMER 30pF	
	TH2901	WA8-0195-000 000	C	1	THERMISTER	
	T2501	DH6-0258-000 000	C	1	TRANSFORMER	
⚠	T2901	DH9-0513-000 000	D	1	FLYBACK TRANSFORMER	
	VC201	VC7-5750-300 000	C	1	CAPACITOR, TRIMMER 30pF	
	VC2101	VC6-3670-100 000	C	1	CAPACITOR, TRIMMER 10pF	
	VC2102	VC6-3670-100 000	C	1	CAPACITOR, TRIMMER 10pF	
	VC2103	VC6-3670-300 000	C	1	CAPACITOR, TRIMMER 30pF	

ELECTRICAL PARTS

SYMBOL	PART NO.	CLASS	QTY	DESCRIPTION	REMARKS
VC2501	VC7-5750-300 000	C	1	CAPACITOR, TRIMMER 30pF	
VL301	DH6-0348-000 000	C	1	INDUCTOR, VARIABLE	
VOL1301	VR9-5031-000 000	C	1	RESISTOR, VARIABLE 5KΩ	
VR051	VR9-5080-000 000	C	1	RESISTOR, VARIABLE 1.5KΩ	
VR202	VR5-7780-473 000	C	1	RESISTOR, VARIABLE 47KΩ	
VR203	VR5-7780-473 000	C	1	RESISTOR, VARIABLE 47KΩ	
VR204	VR5-7780-223 000	C	1	RESISTOR, VARIABLE 22KΩ	
VR206	VR5-7780-472 000	C	1	RESISTOR, VARIABLE 4.7KΩ	
VR207	VR5-7780-472 000	C	1	RESISTOR, VARIABLE 4.7KΩ	
VR208	VR5-7780-472 000	C	1	RESISTOR, VARIABLE 4.7KΩ	
VR210	VR5-7780-102 000	C	1	RESISTOR, VARIABLE 1KΩ	
VR302	VR5-7780-222 000	C	1	RESISTOR, VARIABLE 2.2KΩ	
VR303	VR5-7780-473 000	C	1	RESISTOR, VARIABLE 47KΩ	
VR304	VR5-7780-222 000	C	1	RESISTOR, VARIABLE 2.2KΩ	
VR305	VR5-7780-222 000	C	1	RESISTOR, VARIABLE 2.2KΩ	
VR306	VR5-7780-471 000	C	1	RESISTOR, VARIABLE 470Ω	
VR308	VR5-7780-471 000	C	1	RESISTOR, VARIABLE 470Ω	
VR309	VR5-7780-471 000	C	1	RESISTOR, VARIABLE 470Ω	
VR310	VR5-7780-223 000	C	1	RESISTOR, VARIABLE 22KΩ	
VR1502	VR5-7780-222 000	C	1	RESISTOR, VARIABLE 2.2KΩ	
VR1503	VR5-7780-221 000	C	1	RESISTOR, VARIABLE 220Ω	
VR1504	VR5-7780-332 000	C	1	RESISTOR, VARIABLE 3.3KΩ	
VR1601	VR5-7780-103 000	C	1	RESISTOR, VARIABLE 10KΩ	
VR1701	VR5-7780-222 000	C	1	RESISTOR, VARIABLE 2.2KΩ	
VR2301	VR5-7780-223 000	C	1	RESISTOR, VARIABLE 22KΩ	
VR2302	VR5-7780-223 000	C	1	RESISTOR, VARIABLE 22KΩ	
VR2305	VR5-7780-104 000	C	1	RESISTOR, VARIABLE 100KΩ	
VR2306	VR5-7780-104 000	C	1	RESISTOR, VARIABLE 100KΩ	
VR2307	VR5-7780-223 000	C	1	RESISTOR, VARIABLE 22KΩ	
VR2308	VR5-7780-223 000	C	1	RESISTOR, VARIABLE 22KΩ	
VR2309	VR5-7780-223 000	C	1	RESISTOR, VARIABLE 22KΩ	
VR2310	VR5-7780-223 000	C	1	RESISTOR, VARIABLE 22KΩ	
VR2311	VR5-7780-223 000	C	1	RESISTOR, VARIABLE 22KΩ	
VR2312	VR5-7780-223 000	C	1	RESISTOR, VARIABLE 22KΩ	
VR2313	VR5-7780-473 000	C	1	RESISTOR, VARIABLE 47KΩ	
VR2314	VR5-7780-223 000	C	1	RESISTOR, VARIABLE 22KΩ	
VR2315	VR5-7780-473 000	C	1	RESISTOR, VARIABLE 47KΩ	
VR2316	VR5-7780-473 000	C	1	RESISTOR, VARIABLE 47KΩ	
VR2317	VR5-7780-223 000	C	1	RESISTOR, VARIABLE 22KΩ	
VR2318	VR5-7780-223 000	C	1	RESISTOR, VARIABLE 22KΩ	
VR2501	VR5-7780-103 000	C	1	RESISTOR, VARIABLE 10KΩ	
VR2502	VR5-7780-223 000	C	1	RESISTOR, VARIABLE 22KΩ	
VR2503	VR5-7780-104 000	C	1	RESISTOR, VARIABLE 100KΩ	
VR2901	VR5-7680-201 000	C	1	RESISTOR, VARIABLE 200Ω	
VR2902	VR5-7680-503 000	C	1	RESISTOR, VARIABLE 50KΩ	
⚠ VR2903	VR7-0380-205 000	C	1	RESISTOR, VARIABLE 2MΩ/200V	
⚠ VR2904	VR7-0710-504 000	C	1	RESISTOR, VARIABLE 500KΩ/100V	
X001	WK2-0254-000 000	B	1	OSCILLATOR, CRYSTAL (4.19MHz)	
X100	WK2-5160-000 000	C	1	OSCILLATOR, CRYSTAL (12MHz)	
X201	DH9-0618-000 000	C	1	OSCILLATOR, QUARTZ (4.43MHz)	
X1601	WK2-5117-000 000	C	1	OSCILLATOR, CRYSTAL (8MHz)	
X1701	DH9-0636-000 000	C	1	OSCILLATOR, CRYSTAL (11.58MHz)	
X2101	DH9-0542-000 000	C	1	OSCILLATOR, CRYSTAL (28MHz)	

PARTS LIST

PAGE	PART NO.	CLASS	QTY	DESCRIPTION	REMARKS
6	DA1-1677-000 000	B	1	PLATE, COVER	
6	DA1-1864-000 000	B	1	RING, RUBBER	
6	DA1-2164-000 000	C	1	MASK, CRT	
2	DA1-2211-000 000	C	1	SHAFT	
6	DA1-3752-000 000	C	1	HOLDER (2), RECORDER	
6	DA1-3754-000 000	C	1	HOLDER (4), RECORDER	
6	DA1-3755-000 000	F	3	SCREW, CROSS-RECESS	
6	DA1-3756-000 000	C	1	PLATE, GROUND	
6	DA1-3762-000 000	C	1	TERMINAL (1), LITHIUM BATTERY	
6	DA1-3763-000 000	C	1	TERMINAL (2), LITHIUM BATTERY	
6	DA1-3764-000 000	C	1	HOLDER, P.C.B.	
6	DA1-3765-000 000	C	3	MECHA. DAMPER	
6	DA1-3857-000 000	B	1	SLIDE SWITCH, E.V.F.	
14	DA1-4051-000 000	C	1	EYE CUP	
14	DA1-4054-000 000	C	1	MASK, EYEPIECE	
4	DA1-4276-000 000	C	1	BASE, CAMERA	
4	DA1-4279-000 000	C	1	RING, ADJUST	
4	DA1-4285-000 000	B	1	MOUNT, CAMERA	
4	DA1-4286-000 000	C	1	SPRING, MOUNT	
4	DA1-4287-000 000	C	1	LOCK PIN, CAMERA	
4	DA1-4288-000 000	C	1	LOCK LEVER, CAMERA	
4	DA1-4289-000 000	C	1	GUIDE, LEVER	
4	DA1-4290-000 000	C	1	HOLD, LEVER	
4	DA1-4293-000 000	C	1	SWITCH LEVER	
4	DA1-4294-000 000	C	1	HOLDER (1), CAMERA	
4	DA1-4295-000 000	C	1	HOLDER (2), CAMERA	
4	DA1-4296-000 000	C	1	HOLDER, CAMERA-KEY (2)	
4	DA1-4300-000 000	C	1	SCREW, CROSS-RECESS	
2	DA1-4316-000 000	B	1	KNOB, EDIT	
2	DA1-4319-000 000	B	1	KNOB, EJECT	
2	DA1-4321-000 000	B	1	KNOB, LENS EJECT	
2	DA1-4322-000 000	B	1	KNOB, IRIS	
2	DA1-4323-000 000	B	1	VOLLUME, KNOB, HEADPHONE	
2	DA1-4329-000 000	B	1	KNOB, BATTERY	
2	DA1-4330-000 000	C	1	HOOK, BATTERY	
2	DA1-4331-000 000	C	1	LEVER, BATTERY	
2	DA1-4336-000 000	C	1	SHAFT	
2	DA1-4337-000 000	C	1	HOLDER, JACK	
6	DA1-4338-000 000	C	1	HOLDER (1), RECORDER	
2	DA1-4342-000 000	B	1	BUTTON, ATTENATOR	
2	DA1-4344-000 000	A	2	SEAL	
2	DA1-4345-000 000	B	1	CAP, CAMERA	
2	DA1-4346-000 000	C	1	COVER, LITHIUM BATTERY	
2	DA1-4350-000 000	C	1	HOLDER, GRIP COVER (B)	
2	DA1-4353-000 000	B	1	SEAL	
4	DA1-4356-000 000	C	1	SEAL, RUBBER	
2	DA1-4372-000 000	B	1	COVER (B), GRIP	
2	DA1-4394-000 000	C	1	CUSHION, IRIS	
2	DA1-4397-000 000	C	1	SPRING, PLATE	
2	DA1-4400-000 000	C	1	PLATE	
2	DA1-4494-000 000	B	1	DAMPER (1)	
2	DA1-4495-000 000	B	1	DAMPER (2)	
2	DA1-4496-000 000	F	4	SCREW, CROSS-RECESS	
2	DA1-4499-000 000	B	2	SHOE, ACCESSORY	
2	DA1-4500-000 000	B	2	SHEET, ACCESSORY SHOE	
2	DA1-5355-000 000	F	1	SCREW, CROSS-RECESS	
2	DA1-5357-000 000	B	1	KNOB, CAMERA MODE	
4	DA1-5359-000 000	C	1	HOLDER, PLATE	
2	DA1-5491-000 000	C	1	SHEET	
2	DA1-5697-000 000	B	1	COVER, JACK	

PARTS LIST

	PAGE	PART NO.	CLASS	QTY	DESCRIPTION	REMARKS
	2	DA1-5698-000 000	B	1	COVER (A), GRIP	
	6	DF1-0541-000 000	C	1	PRINTED CORD ASS'Y	
	6	DF1-0778-000 000	C	1	PRINTED CORD ASS'Y	
	2	DF1-0874-000 000	B	1	BUTTON, TRIGGER	
	6	DF1-1010-000 000	C	1	HOLDER (3), RECORDER	
	2	DF1-1223-000 000	B	1	COVER, FRONT	
	2	DF1-1226-000 000	B	1	COVER, CASSETTE	
	2	DG1-1196-000 000	B	1	ZOOM SWITCH (2)	
	6	DG1-1381-000 000	C	1	RECORDER KEY (2) P.C.B.	
	6	DG1-1382-000 000	C	1	HEAD PHONE P.C.B.	
	2	DG1-1384-000 000	C	1	MIC P.C.B.	
	2	DG1-1391-000 000	B	1	COVER, REAR	
	4	DG1-1404-000 000	C	1	CAMERA KEY (2) P.C.B.	
	2	DG1-1412-010 000	C	1	FUSE BATTERY P.C.B.	
	6	DG1-2225-000 000	C	1	TERMINAL P.C.B.	
	4	DG1-2230-000 000	C	1	CAMERA KEY (1) P.C.B.	
	6	DG1-2235-000 000	C	1	VIDEO SUB P.C.B.	
	6	DG1-2262-000 000	C	1	VIDEO P.C.B.	
	6	DG1-2263-000 000	C	1	SYSCON SERVO P.C.B.	
	6	DG1-2264-000 000	C	1	RECORDER KEY (1) P.C.B.	
	4	DG1-2266-000 000	C	1	PROCESS (1) P.C.B.	
	4	DG1-2267-000 000	C	1	PROCESS (2) P.C.B.	
	4	DG1-2268-000 000	C	1	AF P.C.B.	
	2	DG1-2269-000 000	B	1	RIGHT COVER ASS'Y	
	2	DG1-2270-000 000	B	1	LEFT COVER ASS'Y	
	6	DH2-1250-000 000	C	1	CONNECTOR 11P	
	6	DH2-1301-000 000	C	1	PRINTED CORD	
	6	DH2-1304-000 000	C	1	PRINTED CORD	
	6	DH2-1305-000 000	C	1	PRINTED CORD	
	6	DH2-1306-000 000	C	1	PRINTED CORD	
	6	DH2-1307-000 000	C	1	PRINTED CORD	
	6	DH2-1308-000 000	C	1	PRINTED CORD	
	6	DH2-1309-000 000	C	1	PRINTED CORD	
	6	DH2-1318-000 000	C	1	PRINTED CORD	
		DH2-1391-000 000	C	1	CONNECTOR CABLE ASS'Y	
		DH2-1392-000 000	C	1	CONNECTOR CABLE ASS'Y	
		DH2-1398-000 000	C	1	CONNECTOR ASS'Y, 7P	
	6	DH2-1541-000 000	C	1	PRINTED CORD	
	6	DH2-1547-000 000	C	1	PRINTED CORD	
	4	DH2-1549-000 000	C	1	FPC, CCD ASS'Y	
	4	DH3-0017-000 000	C	1	DC/DC CONVERTER	
⚠		DH4-0141-000 000	D	1	LINK, IC ICP-N15	
⚠		DH4-0144-000 000	D	1	LINK, IC ICP-F25	
		DH4-0205-000 000	B	1	IC LVC556F-2	
		DH4-0264-000 000	B	1	IC CXA1208R	
	4	DH4-0272-000 000	C	1	MATRIX P.C.B.	
		DH4-0281-000 000	B	1	IC LD5077	
		DH4-0297-000 000	B	2	IC CXL1506	
	6	DH4-0301-000 000	B	1	JOG P.C.B.	
		DH4-0314-000 000	B	1	IC M37450M4-502FP	
		DH4-0318-000 000	B	1	IC CXA1127AM	
		DH4-0321-000 000	B	1	IC CXD1172AM	
		DH4-0322-000 000	B	1	IC CXD1175AM	
		DH4-0325-000 000	B	1	IC CF38403PJ	
		DH4-0326-000 000	B	1	IC CF78125PJ	
		DH4-0327-000 000	B	1	IC CXD1171M	
		DH4-0411-000 000	B	1	IC MM1058XF	
		DH4-0508-000 000	B	1	IC MM1024AF	
		DH4-0514-000 000	B	1	IC CXA1207AR	
		DH4-0526-000 000	B	1	IC CF45010DW	

PARTS LIST

	PAGE	PART NO.	CLASS	QTY	DESCRIPTION	REMARKS
		DH4-0539-000 000	B	2	IC μPD6456GS-102	
	4	DH4-0603-000 000	C	1	ENCODER P.C.B.	
		DH4-0613-001 000	B	1	IC CXP80620-135Q	
		DH4-0614-000 000	B	1	IC CXP81316-337Q	
		DH4-0641-001 000	B	1	IC ATT75312GF-247	
		DH6-0258-000 000	C	1	TRANSFORMER	
		DH6-0348-000 000	C	1	INDUCTOR, VARIABLE	
		DH9-0405-000 000	C	1	COIL, FERRITE 2μH	
		DH9-0489-000 000	C	1	REMOCON MODULE	
⚠		DH9-0512-000 000	D	1	COIL, 210μH	
⚠		DH9-0513-000 000	D	1	FLYBACK TRANSFORMER	
	4	DH9-0515-000 000	C	1	ACTUATOR	
	2	DH9-0527-000 000	B	1	MICROPHONE	
	4	DH9-0537-000 000	C	1	CRYSTAL FILTER	
		DH9-0542-000 000	C	1	OSCILLATOR, CRYSTAL (28MHz)	
		DH9-0572-000 000	C	1	ROTARY ENCODER	
		DH9-0618-000 000	C	1	OSCILLATOR, QUARTZ (4.43MHz)	
		DH9-0636-000 000	C	1	OSCILLATOR, CRYSTAL (11.58MHz)	
	2	DS1-5182-000 000	C	1	SPRING, COIL	
	4	DS1-5235-000 000	C	3	SPRING, COIL	
	4	DS1-5236-000 000	C	1	SPRING, COIL (1)	
	4	DS1-5238-000 000	C	1	SPRING, COIL (3)	
	2	DS1-6075-000 000	C	1	SPRING, COIL	
	2	DY1-7210-000 000	B	1	COVER, TRIGER SWITCH	
	6	DY1-7264-000 000	C	1	AUDIO (1) P.C.B.	
	6	DY1-7265-000 000	C	1	AUDIO (2) P.C.B.	
	2	DY1-7317-000 000	B	1	KNOB, AUDIO VOLUME (R)	
	2	DY1-7318-000 000	B	1	KNOB, AUDIO VOLUME (L)	
	4	DY1-7503-000 000	B	1	CONTACT ASS'Y	
	6	DY1-7504-000 000	B	1	BOTTOM COVER, E.V.F.	
	6	DY1-7505-000 000	C	1	LCD ASS'Y	
	4	DY1-7514-000 000	C	1	CCD ASS'Y	
	2	DY1-7515-000 000	B	1	TOP COVER ASS'Y	
	14	DY1-7516-000 000	B	1	WIRELESS REMOTE CONTROLLER WL-1000E	
	14	DY2-1223-000 000	B	1	SPORTS FINDER SF-200	
	6	DY2-1288-000 000	B	1	TOP COVER, E.V.F.	
	6	DY2-1291-000 000	C	1	CRT ASS'Y	
	6	DY2-1316-000 000	C	1	E.V.F. P.C.B.	
	14	DY2-1347-000 000	B	1	COUPLER, DC-100	
	2	DY2-1352-000 000	B	1	ZOOM SWITCH (1)	
	2	DY2-1362-000 000	B	1	GRIP COVER	
	10,12	DY4-2440-000 000	F	3	WASHER	
	12	DY4-2527-000 000	F	1	WASHER	
	12	DY4-2648-000 000	C	1	COASTER, LEFT	
	12	DY4-2649-000 000	C	1	COASTER, RIGHT	
	12	DY4-2650-000 000	C	1	GEAR ASS'Y	
	12	DY4-2656-000 000	C	1	GEAR, JOINT	
	12	DY4-2659-000 000	C	1	BRAKE, TS	
	10	DY4-2660-000 000	C	1	BAND, TENSION	
	12	DY4-2662-000 000	C	1	ROLLER, GUIDE	
	10	DY4-2663-000 000	C	1	REEL, SUPPLY	
	10	DY4-2664-000 000	C	1	ARM, TG7	
	12	DY4-2665-000 000	C	1	ARM, PINCH SUB	
	10	DY4-2666-000 000	C	1	REEL, TAKE UP	
	10	DY4-2669-000 000	C	1	ARM	
	12	DY4-2672-000 000	C	1	PLATE, SS	
	8	DY4-2673-000 000	C	1	CASSETTE COMPARTMENT ASS'Y	
	12	DY4-2674-000 000	C	1	ROLLER, GUIDE	
	8	DY4-2675-000 000	C	1	TERMINAL, EARTH	
	10	DY4-2676-000 000	C	1	SWITCH	

PARTS LIST

PAGE	PART NO.	CLASS	QTY	DESCRIPTION	REMARKS
10	DY4-2678-000 000	C	1	SWITCH, PUSH	
10	DY4-2679-000 000	C	1	FLEXIBLE P.C.B. (1)	
10	DY4-2680-000 000	C	1	FLEXIBLE P.C.B. (2)	
10,12	DY4-2681-000 000	F	4	WASHER	
12	DY4-2684-000 000	C	1	PLATE, TT	
12	DY4-2685-000 000	C	2	SPRING, LEAF	
12	DY4-2686-000 000	F	2	SCREW, CROSS-RECESS	
10,12	DY4-2688-000 000	F	6	WASHER	
12	DY4-2689-000 000	F	2	SCREW, CROSS-RECESS	
10	DY4-2690-000 000	C	1	PLATE, TL	
10	DY4-2691-000 000	C	1	BRAKE, LB	
10	DY4-2692-000 000	C	1	LEVER, LB	
12	DY4-2693-000 000	C	1	ARM, RELEASE	
12	DY4-2694-000 000	C	1	GEAR, UL	
12	DY4-2695-000 000	C	1	ARM, UL	
10	DY4-2696-000 000	C	4	PIN, SHAFT	
10	DY4-2697-000 000	C	1	SPRING, COIL	
12	DY4-2698-000 000	C	1	SPRING, COIL	
10	DY4-2699-000 000	C	1	SPRING, COIL	
12	DY4-2700-000 000	C	1	SPRING	
10	DY4-2701-000 000	C	1	FLANGE, TG2	
10	DY4-2702-000 000	C	1	ROLLER, TG2	
10	DY4-2703-000 000	C	1	FLANGE, TG2	
10	DY4-2704-000 000	C	1	SLEEVE, TG2	
10	DY4-2705-000 000	C	1	SPRING, COIL	
12	DY4-2706-000 000	C	1	SPRING, COIL	
10	DY4-2707-000 000	C	1	SPRING, PLATE	
8	DY4-2708-000 000	C	1	SPRING, COIL	
10	DY4-2710-000 000	C	1	HOLDER, LED	
12	DY4-2711-000 000	C	1	LEVER, EJECT	
10	DY4-2712-000 000	C	1	ARM, RELEASE	
10	DY4-2713-000 000	C	1	BRAKE, S	
10	DY4-2714-000 000	C	1	BRAKE, T	
12	DY4-2715-000 000	C	1	BRAKE, UL	
10	DY4-2716-000 000	C	1	ARM, STOPPER	
10	DY4-2717-000 000	C	1	ARM, ADJUST	
12	DY4-2719-000 000	E	1	BELT(S), TIMING	
8	DY4-2720-000 000	C	1	DAMPER, OIL	
8	DY4-2721-000 000	C	1	GUARD, GUIDE	
10	DY4-2722-000 000	C	2	HOLDER, SENSOR	
10	DY4-2723-000 000	C	1	STOPPER, RK	
10	DY4-2724-000 000	C	1	SPRING, COIL	
10	DY4-2725-000 000	C	1	PLATE, SWITCH	
8	DY4-2726-000 000	C	1	CAPSTAN MOTOR	
8,10	DY4-2727-000 000	F	9	SCREW, CROSS-RECESS	
8,10,12	DY4-2728-000 000	F	7	SCREW, CROSS-RECESS	
8	DY4-2729-000 000	C	2	TAPE	
8	DY4-2730-000 000	F	5	SCREW, CROSS-RECESS	
12	DY4-2742-000 000	C	1	GEAR	
12	DY4-2743-000 000	C	1	GEAR	
8	DY4-2910-000 000	C	1	ROLLER ASS'Y	
8	DY4-2911-000 000	C	1	LOADING MOTOR ASS'Y	
10	DY4-2912-000 000	C	1	ARM, PINCH	
10	DY4-2914-000 000	C	1	STOPPER	
12	DY4-2915-000 000	C	1	GEAR, RC	
10	DY4-2917-000 000	C	1	LEVER, SWITCH	
12	DY4-2918-000 000	C	1	GEAR, RK	
12	DY4-2919-000 000	C	1	WORM ASS'Y	
8	DY4-2920-000 000	C	1	CONNECTOR 13P	
10	DY4-2921-000 000	C	1	SWITCH, SLIDE	

PARTS LIST

	PAGE	PART NO.	CLASS	QTY	DESCRIPTION	REMARKS
	12	DY4-2922-000 000	C	1	PULLEY, RELAY B	
	12	DY4-2923-000 000	C	1	BELT(L), TIMING	
	12	DY4-2924-000 000	C	1	GEAR, WHEEL	
	8	DY4-2925-000 000	C	1	HOLDER	
	8	DY4-2936-000 000	E	1	DRUM ASS'Y	
	8	DY4-2937-000 000	E	1	UPPER DRUM ASS'Y	
	14	DY4-2962-000 000	C	1	SHOE, ACCESSORY	
	14	DY4-2963-000 000	B	1	CORD, CURLED W/PLUG	ZM-100 ONLY
	14	DY4-2964-010 000	B	1	WIND SCREEN	
	14	DY4-2965-000 000	F	1	SCREW, CROSS-RECESS	
	14	DY4-2966-000 000	F	4	SCREW, CROSS-RECESS	
	14	DY4-2967-000 000	F	1	SCREW, CROSS-RECESS	
	14	DY4-2968-000 000	B	1	CORD, STRAIGHT W/PLUG	
	14	DY4-2969-000 000	B	1	PLATE, NAME	
	14	DY4-2970-000 000	B	1	PLATE, NAME	
	14	DY4-2971-000 000	B	1	KNOB	
	14	DY4-2972-000 000	B	1	KNOB	
	14	DY4-2973-000 000	B	1	HOLDER, MIC	
	14	DY4-2974-000 000	B	1	COVER, REAR	
	14	DY4-2975-000 000	B	1	COVER, RIGHT	
	14	DY4-2976-000 000	B	1	COVER, LEFT	
	14	DY4-2977-000 000	B	1	COVER, TOP	
	12	DY4-3004-000 000	C	1	PULLEY, RELAY A	
	8	DY4-3091-000 000	C	1	HEAD AMP ASS'Y	
	14	DY4-4386-000 000	C	1	KEY, HARD CASE	
		VC6-3670-100 000	C	2	CAPACITOR, TRIMMER 10pF	
		VC6-3670-300 000	C	1	CAPACITOR, TRIMMER 30pF	
⚠		VC6-4130-106 000	D	1	CAPACITOR, AL/EL 10μF/16V	
⚠		VC7-1360-102 000	D	1	CAPACITOR, CERA 1000pF/1KV	
⚠		VC7-1380-152 000	D	1	CAPACITOR, CERA 1500pF/500V	
		VC7-5750-300 000	C	4	CAPACITOR, TRIMMER 30pF	
		VR5-7680-201 000	C	1	RESISTOR, VARIABLE 200Ω	
		VR5-7680-503 000	C	1	RESISTOR, VARIABLE 50KΩ	
		VR5-7780-102 000	C	1	RESISTOR, VARIABLE 1KΩ	
		VR5-7780-103 000	C	2	RESISTOR, VARIABLE 10KΩ	
		VR5-7780-104 000	C	3	RESISTOR, VARIABLE 100KΩ	
		VR5-7780-221 000	C	1	RESISTOR, VARIABLE 220Ω	
		VR5-7780-222 000	C	5	RESISTOR, VARIABLE 2.2KΩ	
		VR5-7780-223 000	C	14	RESISTOR, VARIABLE 22KΩ	
		VR5-7780-332 000	C	1	RESISTOR, VARIABLE 3.3KΩ	
		VR5-7780-471 000	C	3	RESISTOR, VARIABLE 470Ω	
		VR5-7780-472 000	C	3	RESISTOR, VARIABLE 4.7KΩ	
		VR5-7780-473 000	C	6	RESISTOR, VARIABLE 47KΩ	
⚠		VR7-0380-205 000	C	1	RESISTOR, VARIABLE 2MΩ/200V	
⚠		VR7-0710-504 000	C	1	RESISTOR, VARIABLE 500KΩ/100V	
		VR9-5031-000 000	C	1	RESISTOR, VARIABLE 5KΩ	
		VR9-5080-000 000	C	1	RESISTOR, VARIABLE 1.5KΩ	
		VS1-0876-011 000	C	1	CONNECTOR 11P	
		VS1-0876-013 000	C	1	CONNECTOR 13P	
		VS1-1021-008 000	C	1	CONNECTOR 8P	
		VS1-1169-005 000	C	1	CONNECTOR 5P	
		VS1-1169-008 000	C	1	CONNECTOR 8P	
		VS1-1169-010 000	C	1	CONNECTOR 10P	
		VS1-1169-015 000	C	1	CONNECTOR 15P	
		VS1-1169-020 000	C	1	CONNECTOR 20P	
		VS1-1169-022 000	C	1	CONNECTOR 22P	
		VS1-1169-028 000	C	1	CONNECTOR 28P	
		VS1-5051-008 000	C	1	CONNECTOR 8P	
		VS1-5105-010 000	C	1	CONNECTOR 10P	
		VS1-5106-010 000	C	2	CONNECTOR 10P	

PARTS LIST

PAGE	PART NO.	CLASS	QTY	DESCRIPTION	REMARKS
	VS1-5106-014 000	C	2	CONNECTOR 14P	
	VS1-5106-020 000	C	2	CONNECTOR 20P	
	VS1-5108-010 000	C	1	CONNECTOR 10P	
	VS1-5108-014 000	S	2	CONNECTOR 14P	
	VS1-5149-008 000	C	2	CONNECTOR 8P	
	VS1-5184-020 000	C	2	CONNECTOR 20P	
	VS1-5256-012 000	C	4	CONNECTOR 12P	
	VS1-5256-016 000	C	4	CONNECTOR 16P	
	VS1-5256-020 000	C	2	CONNECTOR 20P	
	VS1-5256-024 000	C	4	CONNECTOR 24P	
	WA1-0617-000 000	B	1	ZENER DIODE, MA3100	
	WA1-0962-000 000	B	1	DIODE MA121	
	WA1-0963-000 000	B	2	DIODE, ZENER MA3A100	
	WA1-0989-000 000	B	1	DIODE, ZENER MA3100W	
	WA1-1084-000 000	B	19	DIODE MA110	
	WA1-1123-000 000	B	1	DIODE AG01Z	
	WA1-1146-000 000	B	1	DIODE MA707	
	WA1-1149-000 000	B	2	CHIP DIODE, 1SS250	
	WA1-1164-000 000	B	2	DIODE DAN202U	
	WA1-5061-000 000	B	1	DIODE DAP202U	
	WA1-5080-000 000	B	2	DIODE EC10QS03	
	WA2-0393-000 201	B	2	TRANSISTOR 2SA1162	
	WA2-0797-000 201	B	4	TRANSISTOR 2SA1213	
	WA2-0839-000 000	B	1	TRANSISTOR 2SA1226	
	WA2-1228-000 000	B	5	TRANSISTOR IMT2	
	WA2-1232-000 000	B	5	TRANSISTOR IMZ1	
	WA2-1234-000 000	B	15	TRANSISTOR IMX2	
	WA2-1337-000 000	B	13	TRANSISTOR 2SC4081	
	WA2-1351-000 000	B	1	TRANSISTOR IMD6	
	WA2-1381-000 000	B	1	TRANSISTOR 2SC3138	
	WA2-1398-000 000	B	1	TRANSISTOR 2SA1255	
	WA2-1400-000 000	B	6	TRANSISTOR 2SA1576	
	WA2-1405-000 000	B	3	TRANSISTOR DTA124EU	
	WA2-1440-000 000	B	1	TRANSISTOR 2SA1576	
	WA2-5092-000 000	B	1	TRANSISTOR IMX5	
	WA2-5122-000 000	B	1	TRANSISTOR FC101	
	WA2-5141-000 000	B	8	TRANSISTOR 2SA1774	
	WA2-5142-000 000	B	16	TRANSISTOR 2SC4617	
	WA2-5149-000 000	B	2	TRANSISTOR 2SB1412F5	
⚠	WA2-5151-000 000	B	1	TRANSISTOR 2SD968A-S	
	WA2-5152-000 000	B	2	TRANSISTOR 2SB1424	
	WA2-5168-000 000	B	1	FET 2SK879	
	WA2-5347-000 000	B	1	TRANSISTOR RN2427	
	WA2-5587-000 000	B	6	TRANSISTOR XDIMD2	
	WA2-5588-000 000	B	1	TRANSISTOR XDIMB6	
	WA2-5589-000 000	B	6	TRANSISTOR XDIMH6	
	WA2-5590-000 000	B	6	TRANSISTOR XDIMH8	
	WA2-5591-000 000	B	1	TRANSISTOR XDA124EE	
	WA2-5594-000 000	B	1	TRANSISTOR XDC124EU	
	WA2-5595-000 000	B	4	TRANSISTOR XDC144EE	
	WA2-5600-000 000	B	1	TRANSISTOR XDC114EE	
	WA2-5608-000 000	B	2	TRANSISTOR XDIMH5	
	WA2-5612-000 000	B	2	TRANSISTOR XDA144EU	
	WA2-5614-000 000	B	1	TRANSISTOR XDC143EU	
	WA2-5615-000 000	B	13	TRANSISTOR XDC144EU	
	WA2-5629-000 000	B	1	TRANSISTOR XDIMB5	
	WA2-5669-000 000	B	2	TRANSISTOR XDC114TE	
	WA3-3965-000 000	B	1	IC SN74HC05NS	
	WA3-4264-000 000	B	5	IC SC14S66F	
	WA3-5156-000 000	B	1	IC TC74HC32AF	

PARTS LIST

PAGE	PART NO.	CLASS	QTY	DESCRIPTION	REMARKS
	WA3-5173-000 000	B	3	IC SC7S00F	
	WA3-5201-000 000	B	1	IC MN3106S	
	WA3-5323-000 000	B	1	IC MB625184UPF	
	WA3-5455-000 000	B	2	IC SC7SU04F	
	WA3-5548-000 000	B	1	IC TMS4C1050-40DJ	
	WA3-5678-000 000	B	2	IC MC74HC164FL2	
	WA3-6393-000 000	B	1	IC CXD2120Q	
	WA3-6755-000 000	B	1	IC MC74HC165FL2	
	WA3-6860-000 000	B	1	IC NM93C06EM8	
	WA3-7051-000 000	B	1	IC S8420AF	
	WA4-1145-000 000	B	2	IC RH5VA45AA	
	WA4-1172-000 000	B	1	IC NJM3415M	
	WA4-1293-000 000	B	1	IC PST529CMT	
	WA4-1322-000 000	B	1	IC AN2514S	
	WA4-1332-000 000	B	1	IC NJM2406F	
	WA4-5161-000 000	B	1	IC CXA1512M	
	WA4-5164-000 000	B	1	IC μPC393G2	
	WA4-5213-000 000	B	1	IC RH5RE50AA	
	WA4-5406-000 000	B	1	IC NJM2284M	
	WA4-5422-000 000	B	1	IC S-81350HG	
	WA4-5437-000 000	B	3	IC LVC556FA2	
	WA4-5470-000 000	B	1	IC TL1596CDB	
	WA4-5476-000 000	B	2	IC NJM2508M	
	WA4-5557-000 000	B	1	IC CX20102	
	WA4-5919-000 000	B	1	IC CXA8006BM	
	WA8-0195-000 000	C	1	THERMISTER	
⚠	WD8-5020-000 000	D	3	LINK, IC DCT2000	
	WG1-0417-000 000	B	1	LED SLH-56VT144F	
	WK2-0254-000 000	B	1	OSCILLATOR, CRYSTAL (4.19MHz)	
	WK2-5117-000 000	C	1	OSCILLATOR, CRYSTAL (8MHz)	
	WK2-5160-000 000	C	1	OSCILLATOR, CRYSTAL (12MHz)	
6	WS6-0104-000 000	C	1	JACK, PIN (WHITE)	
6	WS6-0105-000 000	C	1	JACK, PIN (RED)	
6	XA1-7200-307 000	F	13	SCREW, CROSS-RECESS, PH	
2	XA1-7200-409 000	F	2	SCREW, CROSS-RECESS, PH	
2	XA1-7200-509 000	F	1	SCREW, CROSS-RECESS, PH	
4	XA4-6200-359 000	F	1	SCREW, CROSS-RECESS, FCH	
4	XA4-6200-707 000	F	6	SCREW, CROSS-RECESS, FCH	
4	XA4-6201-209 000	F	3	SCREW, CROSS-RECESS, FCH	
2	XA4-8200-609 000	F	4	SCREW, CROSS-RECESS, FCH	
4	XA4-9170-409 000	F	2	SCREW, CROSS-RECESS, PH	
2	XA4-9200-409 000	F	1	SCREW, CROSS-RECESS, PH	
2,4	XA4-9200-509 000	F	43	SCREW, CROSS-RECESS, PH	
4	XA4-9200-609 000	F	8	SCREW, CROSS-RECESS, PH	
2	XA4-9200-709 000	F	6	SCREW, CROSS-RECESS, PH	
6	XA9-0484-000 000	F	5	SCREW, CROSS-RECESS, FCH	
6	XA9-0682-000 000	F	1	SCREW, CROSS-RECESS, PH	
6	XB4-6201-609 000	F	2	SCREW, CROSS-RECESS	
2	X99-0619-000 000	F	1	SCREW, CROSS-RECESS	
10	Y22-8012-000 000	B	1	LED GL452S	
6	Y22-8120-000 000	B	1	SENSOR, DEW	
10	Y22-8121-000 000	B	2	PHOTO IC SPI-315-25-CD	
10	Y22-8123-000 000	B	2	PHOTO TRANSISTOR EE-TP109	

CHAPTER V. DIAGRAMS

1. Interconnection Diagram .... V – 1

2. Block Diagrams
2-1 CAMERA SECTION (AUTO FOCUS P.C.B.) .... V – 2
2-2 CAMERA SECTION (PROCESS 1•2 P.C.B.) .... V – 3
2-3 SYSCON-SERVO SECTION .... V – 4
2-4 DIGITAL-SIGNAL-PROCESS SECTION .... V – 5
2-5 AUDIO-VIDEO SECTION .... V – 6

3. Circuit Board/Schematic Diagrams
3-1 AUTO FOCUS P.C.B. .... V – 7, 8,
3-2 PROCESS 1•2 P.C.B. .... V – 9, 10,
3-3 VIDEO P.C.B. .... V – 11, 12,
3-4 RECORDER-KEY (1), EVF P.C.B. .... V – 13, 14,
3-5 SYSCON-SERVO P.C.B. .... V – 15, 16, 17, 18, 19, 20

<Indications in circuit diagrams>

- ° Resistance is represented in ohms (Ω).
- ° Capacitance is represented in farads (F).
- ° Wattage of resistor is 1/16 W unless otherwise specified.
- ° Withstand voltage of capacitor is 25 V unless otherwise specified.
- ° Waveform photographs are taken by using a 10:1 probe.
- ° IC Nos. in P.C.B.s are listed on the bottom of diagrams.
- ° Voltage values are waveform photographs in circuit diagram are based on the following condition.

Camera section conditions
Color bar, standard angle of view

Recorder section conditions
Recording : Color bar (pattern generator)
Playback : Self-recording playback (color bar)

INTERCONNECTION DIAGRAM

PROCESS 1 P.C.B.	
CN2101	
1	V OUT
2	+15V
3	GND
4	−10V
5	V1
6	GND
7	V SUB
8	V2
9	V3
10	V4
11	H2
12	H1
13	NC
14	RG
15	+15V
16	GND
17	GND
18	Vss
19	NC
20	VDD
CN2102	
1	+15V
2	−10V
3	CAMERA 5V
4	CAMERA 5V
5	GND
6	HD
7	GND
8	VD
9	GND
10	YS
CN2103	
1	S2
2	GND
3	S1
4	Y AGC
5	GND
6	GND
7	CLP 3
8	CLP 2
9	XDL 2
10	XV 1
11	XDL 1
12	GND
13	CLOCK
14	PLL
15	AGC
16	V SUB
17	BLK
18	RG VR
19	ID
20	VSUB VR
CN2104	
1	CG-STROBE
2	VD
3	S-DATA
4	FL 1
5	S-CLOCK
6	SHUTTER 0
7	GATE 24
8	SHUTTER 1
9	Y FL
10	SHUTTER 2
11	Y AGC
12	XSG GATE
13	Y IRIS
14	LATA
15	+1.9V
16	BF
17	EN
18	SYNC
19	GND
20	4fsc

PROCESS 2 P.C.B.	
CN2301	
1	CG-STROBE
2	VD
3	S-DATA
4	FL 1
5	S-CLOCK
6	SHUTTER 0
7	GATE 24
8	SHUTTER 1
9	Y FL
10	SHUTTER 2
11	Y AGC
12	XSG GATE
13	Y IRIS
14	LATA
15	+1.9V
16	BF
17	EN
18	SYNC
19	GND
20	4fsc
CN2302	
1	S2
2	GND
3	S1
4	Y AGC
5	GND
6	GND
7	CLP 3
8	CLP 2
9	XDL 2
10	XV 1
11	XDL 1
12	GND
13	CLOCK
14	PLL
15	AGC
16	V SUB
17	BLK
18	RG VR
19	ID
20	VSUB VR
CN2303	
1	Y AF
2	+15V
3	GND
4	CAMERA 5V
5	UNREG 6V
6	Y IRIS
7	GND
8	SLOW EN2
9	LENS Ⓗ
10	AF-CS
11	S-CLOCK
12	S-DATA
13	S-DATA
14	CAMERA ON Ⓛ
CN2304	
1	CAMERA 5V
2	KEY IN 2
3	KEY IN 3
4	KEY OUT 1
5	KEY OUT 2
6	KEY OUT 3
7	KEY OUT 4
8	KEY OUT 5
9	ENC A
10	ENC B
11	ADJ
12	CAMERA 5V
13	LENS Ⓗ
14	GND
CN2305	
1	CAMERA ON Ⓛ
2	CAMERA-CS
3	S-DATA
4	S-CLOCK
5	S-DATA
6	GND
7	SLOW TIMING
8	A-FADE
9	GND
10	NC
CN2307	
1	CAMERA (C)
2	CAMERA (SC)
3	CAMERA (Y)
4	GND
5	GND
CN2308	
1	PRESET
2	NC
3	NC
4	GATE 24
5	ID
6	GND
7	XDL 1
8	RG-VR
9	V SUB
10	PLL
11	Y AGC
12	Y OUT
13	G OUT
14	OFFSET

AUTO FOCUS P.C.B.	
CN2501	
1	UNREG 6V
2	GND
CN2502	
1	CAMERA 5V
2	NC
3	GND
4	+15V
5	GND
6	−10V
7	UNREG 6V
8	CAMERA ON Ⓛ
CN2503	
1	Y AF
2	+15V
3	GND
4	CAMERA 5V
5	UNREG 6V
6	Y IRIS
7	GND
8	SLOW EN2
9	LENS Ⓗ
10	AF-CS
11	S-CLOCK
12	S-DATA
13	S-DATA
14	CAMERA ON Ⓛ
CN2504	
1	+15V
2	−10V
3	CAMERA 5V
4	CAMERA 5V
5	GND
6	HD
7	GND
8	VD
9	GND
10	YS
CN2505	
1	ZOOM SW 2
2	GND
3	+3.6V
CN2506	
1	ZOOM SW 1
2	GND
3	+3.6V
CN2507	
1	UNREG 6V
2	GND
CN2508	
1	V BAT
2	GND
CN2509	
1	LENS CS
2	S-DATA IN
3	S-DATA OUT
4	S-CLOCK
CN2510	
1	PIEZO
2	GND
CN2511	
1	AF FRAME
2	DSP SELECT Ⓗ

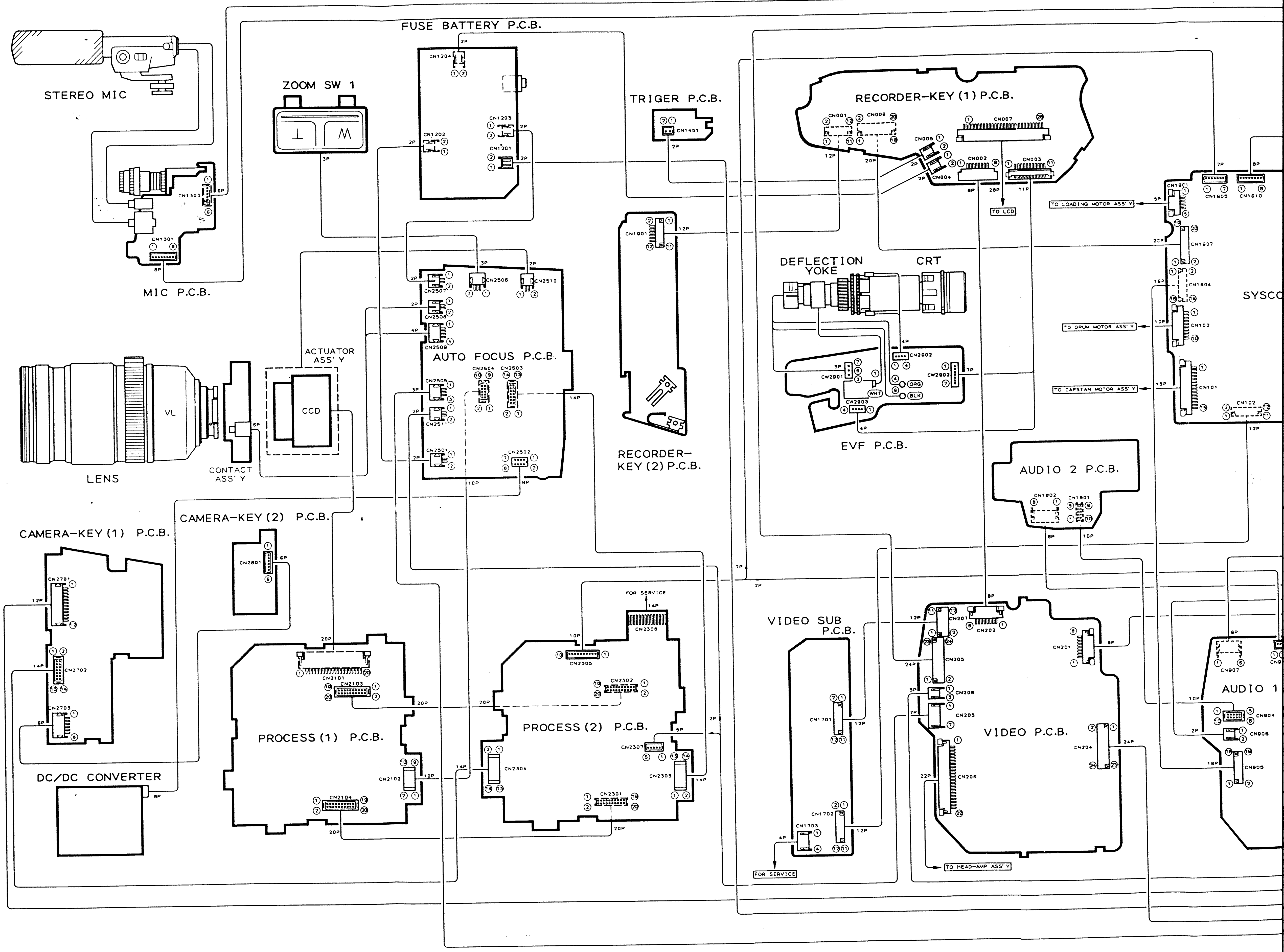
TRIGER P.C.B.	
CN1451	
1	TRIG. SW Ⓛ
2	GND

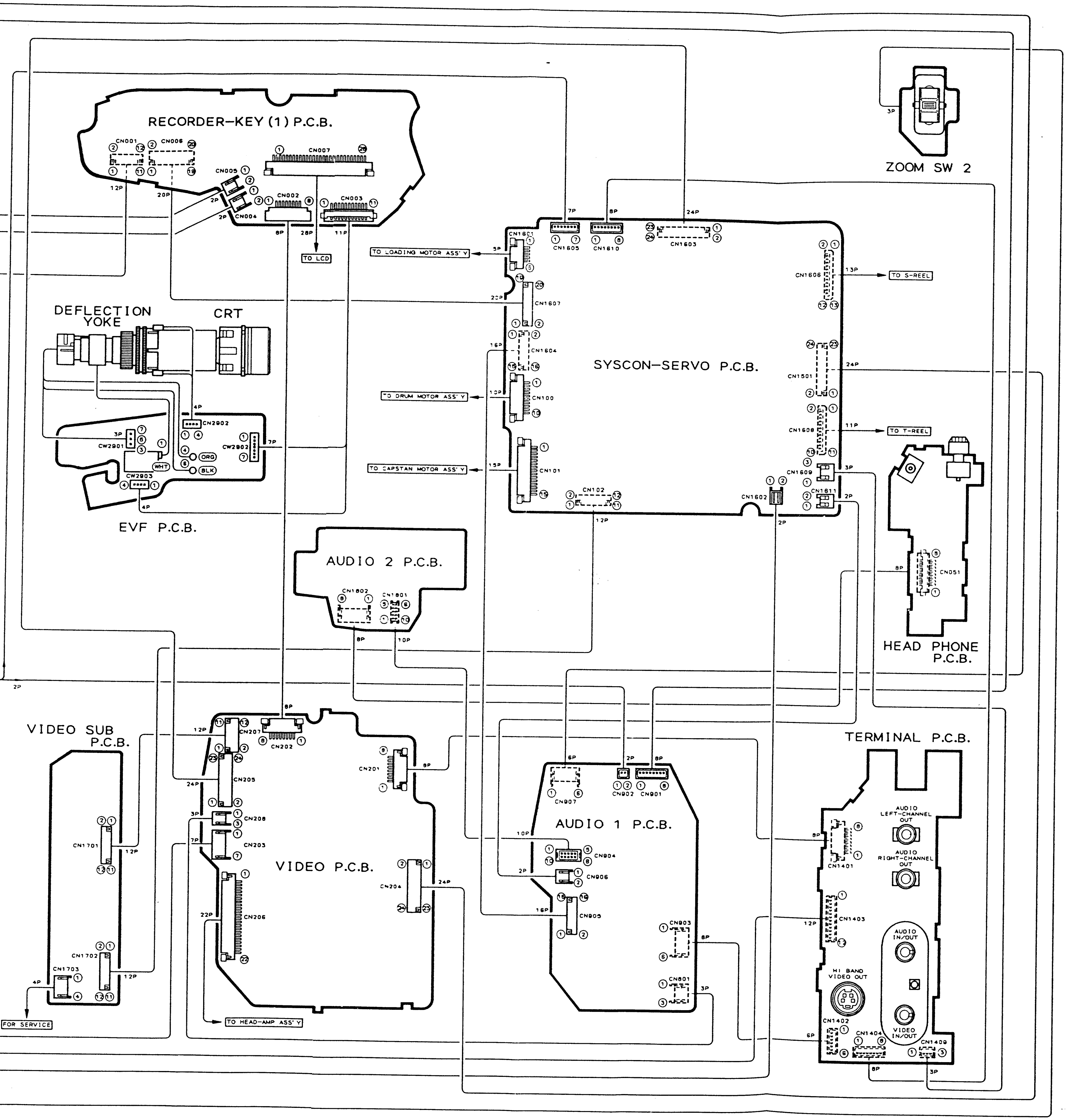
FUSE BATTERY P.C.B.	
CN1201	
1	UNREG 6V
2	GND
CN1202	
1	UNREG 6V
2	GND
CN1203	
1	UNREG 6V
2	GND
CN1204	
1	TRIG. SW Ⓛ
2	GND

CAMERA-KEY 1 P.C.B.	
CN2701	
1	INDEX MARK SW Ⓛ
2	DE ON SW Ⓛ
3	DE. OFF SW Ⓛ
4	GND
5	KEY IN 3
6	KEY OUT 1
7	KEY OUT 2
8	KEY OUT 3
9	KEY OUT 4
10	KEY OUT 5
11	TITLE SW Ⓛ
12	DATE SW Ⓛ
CN2702	
1	CAMERA 5V
2	KEY IN 2
3	KEY IN 3
4	KEY OUT 1
5	KEY OUT 2
6	KEY OUT 3
7	KEY OUT 4
8	KEY OUT 5
9	ENC A
10	ENC B
11	ADJ
12	CAMERA 5V
13	LENS Ⓗ
14	GND
CN2703	
1	GND
2	LENS Ⓗ
3	TITLE SW Ⓛ
4	DATE SW Ⓛ
5	ADJ.
6	CAMERA 5V

CAMERA-KEY 2 P.C.B.	
CN2801	
1	KEY IN 1
2	LENS Ⓗ
3	TITLE SW Ⓛ
4	DATE SW Ⓛ
5	ADJ.
6	CAMERE 5V

MIC P.C.B.	
CN1301	
1	GND
2	Lch
3	NC
4	NC
5	Rch
6	NC
7	AUDIO 5V
8	ATT SW 20dB Ⓛ
CN1303	
1	GND
2	Rch (VR OUT)
3	Rch (VR IN)
4	Lch (VR IN)
5	Lch (VR OUT)
6	GND


STEREO MIC
MIC P.C.B.
CN1303
CN1301
6P
8P
ZOOM SW 1
3P
FUSE BATTERY P.C.B.
CN1204
CN1202
CN1203
CN1201
2P
TRIGER P.C.B.
CN1451
RECORDER-KEY (1) P.C.B.
CN001
CN006
CN007
CN005
CN004
CN002
CN003
12P
20P
8P
28P
11P
TO LCD
CN1605
CN1610
7P
CN1601
CN1607
CN1604
CN100
CN101
CN102
5P
20P
16P
10P
15P
12P
TO LOADING MOTOR ASS'Y
TO DRUM MOTOR ASS'Y
TO CAPSTAN MOTOR ASS'Y
SYSCO
CN1901
RECORDER-KEY (2) P.C.B.
DEFLECTION YOKE
CRT
CN2902
CW2901
CW2902
CW2903
ORG
WHT
BLK
4P
3P
7P
EVF P.C.B.
AUDIO 2 P.C.B.
CN1802
CN1801
10P
LENS
VL
CONTACT ASS'Y
ACTUATOR ASS'Y
CCD
AUTO FOCUS P.C.B.
CN2507
CN2506
CN2510
CN2508
CN2509
CN2505
CN2511
CN2501
CN2504
CN2503
CN2502
14P
CAMERA-KEY (1) P.C.B.
CN2701
CN2702
CN2703
CAMERA-KEY (2) P.C.B.
CN2801
DC/DC CONVERTER
PROCESS (1) P.C.B.
CN2101
CN2103
CN2102
CN2104
PROCESS (2) P.C.B.
CN2305
CN2308
FOR SERVICE
CN2302
CN2307
CN2304
CN2303
CN2301
VIDEO SUB P.C.B.
CN1701
CN1702
CN1703
FOR SERVICE
VIDEO P.C.B.
CN207
CN202
CN205
CN208
CN203
CN206
CN201
CN204
22P
24P
TO HEAD-AMP ASS'Y
AUDIO 1
CN907
CN904
CN906
CN905


RECORDER-KEY (1) P.C.B.
CN001
CN006
CN007
CN005
CN004
CN002
CN003
12P
20P
2P
8P
28P
11P
TO LCD
ZOOM SW 2
3P
TO LOADING MOTOR ASS'Y
SYSCON-SERVO P.C.B.
CN1601
CN1605
CN1610
CN1603
CN1606
CN1607
CN1604
CN100
CN101
CN102
CN1501
CN1608
CN1609
CN1602
CN1611
7P
8P
24P
5P
22P
16P
10P
15P
13P
11P
12P
2P
3P
TO S-REEL
TO T-REEL
TO DRUM MOTOR ASS'Y
TO CAPSTAN MOTOR ASS'Y
DEFLECTION YOKE
CRT
CN2902
CW2902
CW2901
CW2903
WHT
ORG
BLK
4P
7P
EVF P.C.B.
AUDIO 2 P.C.B.
CN1802
CN1801
10P
HEAD PHONE P.C.B.
CN051
VIDEO SUB P.C.B.
CN1701
CN1702
CN1703
FOR SERVICE
VIDEO P.C.B.
CN207
CN202
CN201
CN205
CN208
CN203
CN206
CN204
TO HEAD-AMP ASS'Y
AUDIO 1 P.C.B.
CN907
CN902
CN901
CN904
CN906
CN905
CN903
CN801
6P
TERMINAL P.C.B.
CN1401
CN1403
CN1402
CN1404
CN1409
AUDIO LEFT-CHANNEL OUT
AUDIO RIGHT-CHANNEL OUT
AUDIO IN/OUT
HI BAND VIDEO OUT
VIDEO IN/OUT

RECORDER-KEY 1 P.C.B.	
CN001	
1	NC
2	NC
3	NC
4	LINE IN/OUT SW Ⓛ
5	SP/LP SW Ⓛ
6	COUNTER/TC SW Ⓛ
7	− SW Ⓛ
8	+ SW Ⓛ
9	SHIFT SW Ⓛ
10	TITLE/DATE SW Ⓛ
11	LITHIUM 3V
12	GND
CN002	
1	GND
2	VD
3	HD
4	UNREG 6V
5	UNREG 6V
6	AV ON Ⓛ
7	GND
8	EVF VIDEO
CN003	
1	EVF VIDEO
2	GND
3	AV ON Ⓛ
4	UNREG 6V
5	GND
6	HD
7	VD
8	TALLY
9	SS 5V
10	REMOCON DATA
11	GND
CN004	
1	GND
2	TRIG. SW Ⓛ
CN005	
1	GND
2	TRIG. SW Ⓛ
CN006	
1	HD
2	POWER ON Ⓛ
3	SHIFT Ⓗ/LOAD Ⓛ
4	AUDIO-DATA
5	SHIFT-CLOCK
6	NC
7	HIMP Ⓗ
8	UNREG 6V
9	SAFETY TAB Ⓗ
10	ME Ⓗ/MP Ⓛ
11	KEY-CS
12	S-DATA
13	S-DATA
14	S-CLOCK
15	WAKE UP Ⓛ
16	E5 DET.
17	CG1-CS
18	CG1-STROBE
19	GND
20	SS 5V
CN007	
1	COM3
2	COM2
3	COM1
4	COM0
5	SEG0
6	SEG1
7	SEG2
8	SEG3
9	SEG4
10	SEG5
11	SEG6
12	SEG7
13	SEG8
14	SEG9
15	SEG10
16	SEG11
17	SEG12
18	SEG13
19	SEG14
20	SEG15
21	SEG16
22	SEG17
23	SEG18
24	SEG19
25	SEG20
26	SEG21
27	SEG22
28	SEG23

RECORDER-KEY 2 P.C.B.	
CN1901	
1	GND
2	LITHIUM 3V
3	TITLE/DATE SW Ⓛ
4	SHIFT SW Ⓛ
5	+ SW Ⓛ
6	− SW Ⓛ
7	COUNTER/TC SW Ⓛ
8	SP/LP SW Ⓛ
9	LINE IN/OUT SW Ⓛ
10	NC
11	NC
12	NC

EVF P.C.B.	
CN2902	
1	H+
2	H−
3	V+
4	V−
CW2901	
1	H
2	G1
3	K
CW2902	
1	EVF VIDEO
2	GND
3	AV ON Ⓛ
4	UNERG 6V
5	GND
6	HD
7	VD
CW2903	
1	TALLY
2	SS 5V
3	REMOCON DATA
4	GND

SYSCON-SERVO P.C.B.	
CN100	
1	GND
2	D-PG
3	PG-COM
4	D-FG
5	FG-COM
6	GND
7	COM
8	W
9	V
10	U
CN101	
1	GND
2	SS 5V
3	C-FG1
4	C-FG2
5	W
6	U
7	HE−
8	V+
9	V−
10	HE+
11	U+
12	U−
13	V
14	W+
15	W−
CN102	
1	CH-1' HEAD SW PULSE
2	NC
3	GND
4	REC Ⓛ
5	GND
6	SP Ⓗ/LP Ⓛ
7	Hi8 DET Ⓗ
8	HEAD SW PULSE
9	ATF ADJ. Ⓗ
10	TS B
11	GND
12	ATF ERROR
13	ATF LOCK Ⓛ
14	ATF SW
15	SEL2
16	SEL1
CN1501	
1	REC BIAS CONT.
2	RCTC AREA
3	PB RCTC-RF
4	AFTER REC Ⓗ
5	REC RCTC-RF
6	HEAD SW PULSE
7	PB-RF
8	GND
9	HEAD SW PULSE (V. A)
10	SC
11	COMB ON Ⓛ
12	UNREG 6V
13	UNREG 6V
14	ME Ⓗ/MP Ⓛ
15	C (DSP IN)
16	GND
17	GND
18	C (DSP OUT)
19	LINE Ⓗ/CAMERA Ⓛ
20	GND
21	Y (DSP IN)
22	HIMP Ⓗ
23	MASK
24	Y (DSP OUT)
CN1601	
1	SS 5V
2	DEW SENSOR
3	GND
4	UNLOAD Ⓗ
5	LOAD Ⓗ
CN1602	
1	UNREG 6V
2	GND
CN1603	
1	AV ON Ⓛ
2	SP Ⓗ/LP Ⓛ
3	JOG Ⓗ
4	PB Ⓗ/EE Ⓛ
5	EDIT SW ON Ⓛ
6	CH-1' HEAD SW PULSE
7	DSP SELECT Ⓗ
8	HI8 Ⓗ/NORM. Ⓛ
9	FE ON Ⓛ
10	REC Ⓛ
11	COMP. IN Ⓛ
12	DISPLAY Ⓛ
13	CG1-STROBE
14	S-CLOCK
15	S-DATA
16	S CONNECTED Ⓛ
17	COMP. SYNC
18	V-MUTE Ⓗ
18	ACK
20	VIDEO-CS
21	CG0-STROBE
22	CG0/V-CLOCK
23	CG0/V-DATA
24	JOG VD/RCTC HD
CN1604	
1	NC
2	Rch LEVEL
3	NC
4	Lch LEVEL
5	REC REV. AUTO Ⓗ
6	NC
7	NC
8	NC
9	SS 5V
10	HI8 Ⓗ/NORM. Ⓛ
11	AV ON Ⓛ
12	CAMERA Ⓗ/LINE Ⓛ
13	STEREO Ⓗ/MONO. Ⓛ
14	PB Ⓗ/EE Ⓛ
15	A-MUTE Ⓗ
16	HEAD SW PULSE (V, A)
CN1605	
1	CAMERA ON Ⓛ
2	CAMERA-CS
3	S-DATA
4	S-CLOCK
5	S-DATA
6	GND
7	SLOW TIMING

SYSCON-SERVO P.C.B.	
CN1606	
1	NC
2	NC
3	NC
4	EOT SENS. Ⓗ
5	SS 5V
6	CASSETTE DOWN Ⓛ
7	GND
8	MODE 1
9	MODE 2
10	MODE 3
11	S-REEL FG
12	SS 5V
13	S-REEL LED (−)
CN1607	
1	SS 5V
2	GND
3	CG1-STROBE
4	CG1-CS
5	E5 DET.
6	WAKE UP Ⓛ
7	S-CLOCK
8	S-DATA
9	S-DATA
10	KEY-CS
11	ME Ⓗ/MP Ⓛ
12	SAFETY TAB Ⓗ
13	UNREG 6V
14	HIMP Ⓗ
15	NC
16	SHIFT CLOCK
17	AUDIO DATA
18	SHIFT Ⓗ/LOAD Ⓛ
19	POWER ON Ⓛ
20	HD
CN1608	
1	T-REEL LED (−)
2	SS 5V
3	T-REEL FG
4	SS 5V
5	BOT SENS. Ⓗ
6	SS 5V
7	TAPE SENS. LED
8	SAFETY TAB Ⓗ
9	HiMP Ⓗ
10	ME Ⓗ/MP Ⓛ
11	GND
CN1609	
1	LANC
2	GND
3	EDIT 6V
CN1610	
1	EVER 5V
2	D.E. ON SW Ⓛ
3	D.E. SELECT SW Ⓛ
4	GND
5	INDEX MARK SW Ⓛ
6	TITLE SW Ⓛ
7	DATE SW Ⓛ
8	D.E. OFF SW Ⓛ
CN1611	
1	UNREG 6V
2	GND

TERMINAL P.C.B.	
CN1401	
1	S CONNECTED Ⓛ
2	EDIT SW ON Ⓛ
3	VIDEO 5V
4	VIDEO I/O
5	GND
6	C I/O
7	GND
8	Y I/O
CN1402	
1	MONO I/O
2	GND
3	Lch I/O
4	GND
5	Rch I/O
6	GND
CN1403	
1	INDEX MARK SW Ⓛ
2	D.E. ON SW Ⓛ
3	D.E. OFF SW Ⓛ
4	GND
5	KEY IN 3
6	KEY OUT 1
7	KEY OUT 2
8	KEY OUT 3
9	KEY OUT 4
10	KEY OUT 5
11	TITLE SW Ⓛ
12	DATE SW Ⓛ
CN1404	
1	EVER 5V
2	D.E. ON SW Ⓛ
3	D.E. SELECT SW Ⓛ
4	GND
5	INDEX MARK SW Ⓛ
6	TITLE SW Ⓛ
7	DATE SW Ⓛ
8	D.E. OFF SW Ⓛ
CN1409	
1	LANC
2	GND
3	EDIT 6V

HEAD-PHONE P.C.B.	
CN051	
1	GND
2	Lch
3	Rch
4	GND
5	A-MUTE Ⓗ
6	AUDIO 5V
7	GND
8	P ON-MUTE

VIDEO P.C.B.	
CN201	
1	S CONNECTED Ⓛ
2	EDIT SW ON Ⓛ
3	VIDEO 5V
4	VIDEO I/O
5	GND
6	C I/O
7	GND
8	Y I/O
CN202	
1	EVF VIDEO
2	GND
3	AV ON Ⓛ
4	UNREG 6V
5	UNREG 6V
6	HD
7	VD
8	GND
CN203	
1	CAMERA (C)
2	GND
3	CAMERA (Y)
4	GND
5	CAMERA (SC)
6	AF FRAME
7	DSP SELECT Ⓗ
CN204	
1	Y (DSP OUT)
2	MASK
3	HIMP Ⓗ
4	Y (DSP IN)
5	GND
6	LINE Ⓗ/CAMERA Ⓛ
7	C (DSP OUT)
8	GND
9	GND
10	C (DSP IN)
11	ME Ⓗ/MP Ⓛ
12	UNREG 6V
13	UNREG 6V
14	COMB ON Ⓛ
15	SC
16	HEAD SW PULSE (V. A)
17	GND
18	PB-RF
19	HEAD SW PULSE
20	REC RCTC-RF
21	AFTER REC Ⓗ
22	PB RCTC-RF
23	RCTC AREA
24	REC BIAS CONT.
CN205	
1	JOG VD/RCTC HD
2	CG0/V-DATA
3	CG0/V-CLOCK
4	CG0-STROBE
5	VIDEO-CS
6	ACK
7	V-MUTE Ⓗ
8	COMP. SYNC
9	S CONNECTED Ⓛ
10	S-DATA
11	S-CLOCK
12	CG1-STROBE
13	DISPLAY Ⓛ
14	COMP.IN Ⓛ
15	REC Ⓛ
16	FE ON Ⓛ
17	HI8 Ⓗ/NORM. Ⓛ
18	DSP. SELECT Ⓗ
19	CH-1' HEAD SW PULSE
20	EDIT SW ON Ⓛ
21	PB Ⓗ/EE Ⓛ
22	JOG Ⓗ
23	SP Ⓗ/LP Ⓛ
24	AV ON Ⓛ
CN206	
1	GND
2	NC
3	REC RCTC-RF
4	VIDEO 5V
5	NC
6	NC
7	PB-RF
8	REC-RF
9	NC
10	CH-1' HEAD SW PULSE
11	REC Ⓛ
12	AFTER REC Ⓗ
13	GND
14	PB RCTC-RF
15	RCTC AREA
16	HEAD SW PULSE
17	NC
18	NC
19	ME Ⓗ/MP Ⓛ
20	NC
21	FE ON Ⓛ
22	PB 5V
CN207	
1	VIDEO 5V
2	SC
3	COMP. SYNC
4	REC ATF
5	PB 5V
6	PB-RF (Y EQ)
7	DOP Ⓗ
8	NORM. Ⓗ/HI8 Ⓛ
9	PB-RF (Y)
10	ME Ⓗ/MP Ⓛ
11	PB-RF
12	GND
CN208	
1	REC AFM
2	GND
3	PB-RF

AUDIO 1 P.C.B.	
CN901	
1	GND
2	Lch
3	L-BIAS
4	R-BIAS
5	Rch
6	GND
7	AUDIO 5V
8	ATT SW 20dB Ⓛ
CN902	
1	A-FADE
2	GND
CN903	
1	MONO I/O
2	GND
3	Lch I/O
4	GND
5	Rch I/O
6	GND
CN904	
1	GND
2	Lch
3	Rch
4	GND
5	Rch LEVEL
6	Lch LEVEL
7	A-MUTE Ⓗ
8	AUDIO 5V
9	GND
10	P ON-MUTE Ⓗ
CN905	
1	HEAD SW PULSE (V, A)
2	A-MUTE Ⓗ
3	PB Ⓗ/EE Ⓛ
4	STEREO Ⓗ/MONO. Ⓛ
5	CAMERA Ⓗ/LINE Ⓛ
6	AV ON Ⓛ
7	NC
8	SS 5V
9	UNREG 6V
10	NC
11	NC
12	REC LEV. AUTO Ⓗ
13	Lch LEVEL
14	NC
15	Rch LEVEL
16	NC
CN906	
1	UNREG 6V
2	GND
CN907	
1	GND
2	Rch (VR OUT)
3	Rch (VR IN)
4	Lch (VR IN)
5	Lch (VR OUT)
6	GND
CN801	
1	REC AFM
2	GND
3	PB-RF

AUDIO 2 P.C.B.	
CN1801	
1	GND
2	Lch
3	Rch
4	GND
5	Rch LEVEL
6	Lch LEVEL
7	A-MUTE Ⓗ
8	AUDIO 5V
9	GND
10	P ON MUTE Ⓗ
CN1802	
1	GND
2	Lch
3	Rch
4	GND
5	A-MUTE Ⓗ
6	AUDIO 5V
7	GND
8	P ON-MUTE Ⓗ

VIDEO SUB P.C.B.	
CN1701	
1	GND
2	PB-RF
3	ME Ⓗ/MP Ⓛ
4	PB-RF (Y)
5	NORM. Ⓗ/HI8 Ⓛ
6	DOP Ⓗ
7	PB-RF (Y EQ)
8	PB 5V
9	REC ATF
10	COMP. SYNC
11	SC
12	VIDEO 5V
CN1702	
1	SEL1
2	SEL2
3	ATF SW
4	ATF LOCK Ⓛ
5	ATF ERROR
6	GND
7	TS B
8	ATF ADJ. Ⓗ
9	HEAD SW PULSE
10	HI8 DET Ⓗ
11	SP Ⓗ/LP Ⓛ
12	GND
13	REC Ⓛ
14	GND
15	NC
16	CH-1' HEAD SW PULSE
CN1703	
1	PB-RF
2	GND
3	HEAD SW PULSE
4	SHIFT

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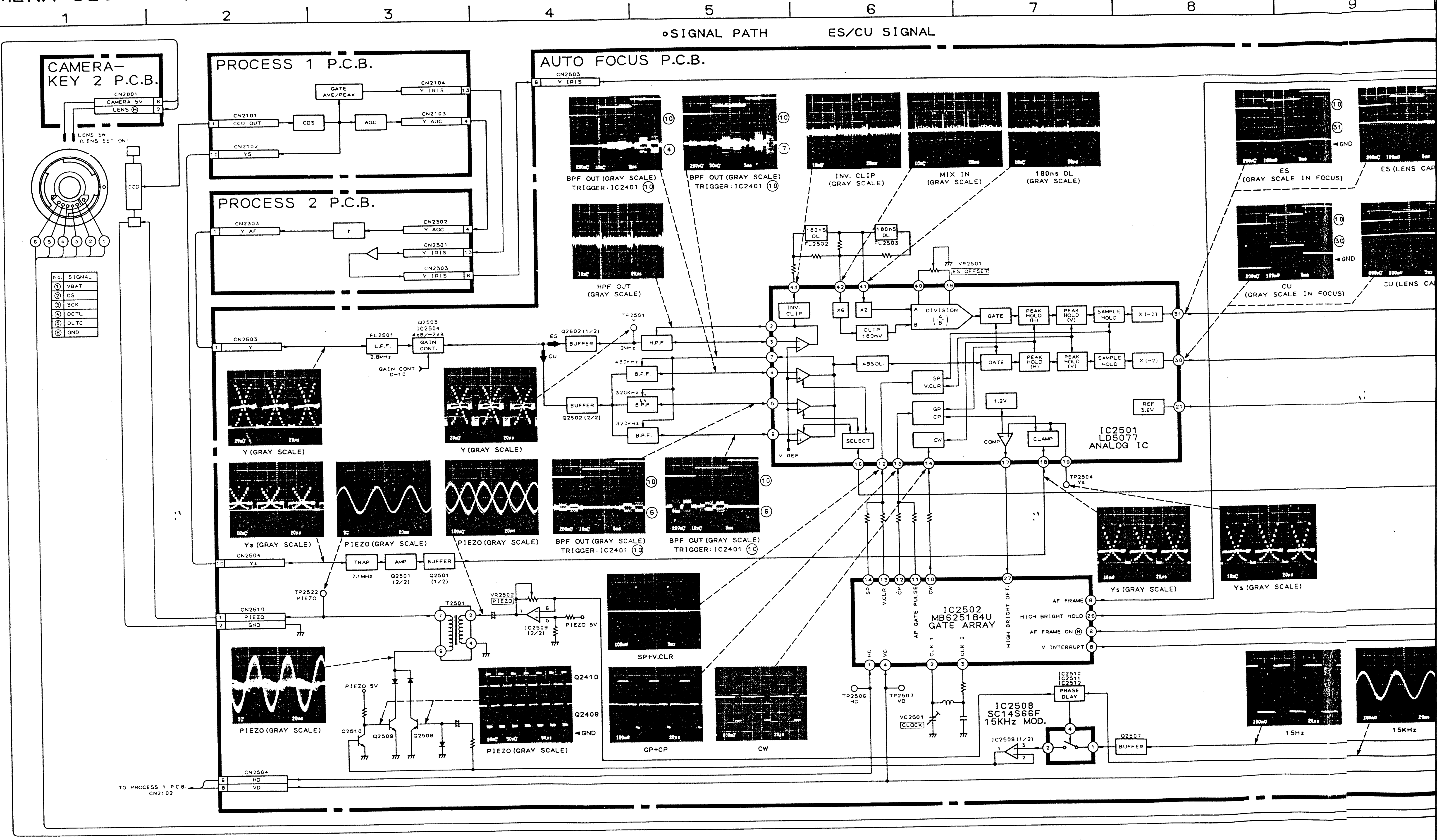
MERA SECTION (AUTO FOCUS P.C.B.)


1
2
3
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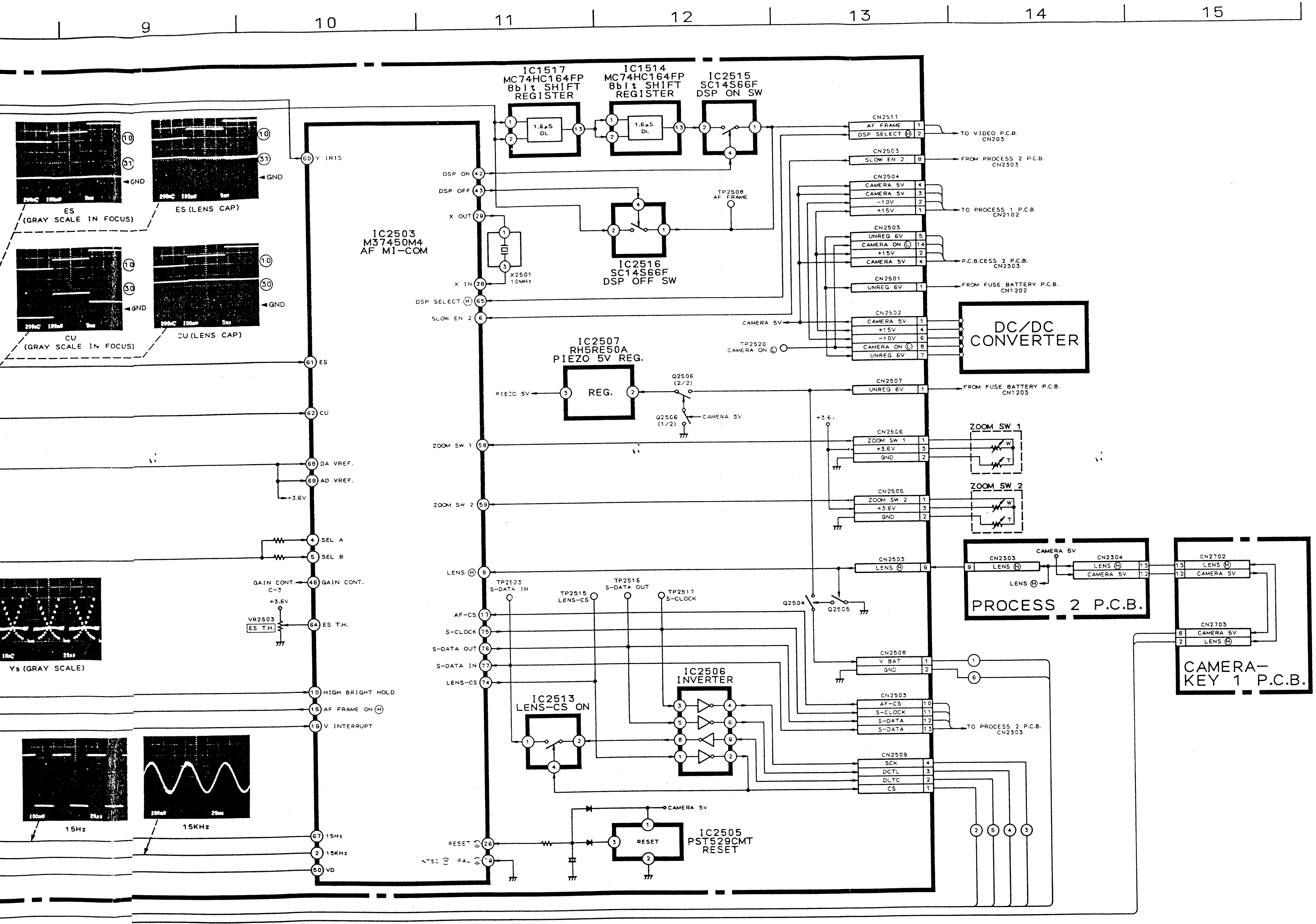
9
∘SIGNAL PATH
ES/CU SIGNAL
CAMERA-KEY 2 P.C.B.
CN2801
CAMERA 5V
LENS (H)
LENS SW (LENS SET ON)
CCD
No. SIGNAL
① VBAT
② CS
③ SCK
④ DCTL
⑤ DLTC
⑥ GND
PROCESS 1 P.C.B.
GATE AVE/PEAK
CN2104
Y IRIS
CN2101
CCD OUT
CDS
AGC
CN2103
Y AGC
CN2102
YS
PROCESS 2 P.C.B.
CN2303
Y AF
γ
CN2302
Y AGC
CN2301
Y IRIS
CN2303
Y IRIS
AUTO FOCUS P.C.B.
CN2503
Y IRIS
BPF OUT (GRAY SCALE) TRIGGER: IC2401 ⑩
BPF OUT (GRAY SCALE) TRIGGER: IC2401 ⑩
INV. CLIP (GRAY SCALE)
MIX IN (GRAY SCALE)
180ns DL (GRAY SCALE)
ES (GRAY SCALE IN FOCUS)
ES (LENS CAP
CU (GRAY SCALE IN FOCUS)
CU (LENS CA
HPF OUT (GRAY SCALE)
GND
180nS DL FL2502
180nS DL FL2503
VR2501 ES OFFSET
CN2503
Y
FL2501
L.P.F.
2.8MHz
Q2503 IC2504 4dB/-2dB
GAIN CONT.
GAIN CONT. D-10
ES
CU
Q2502 (1/2)
BUFFER
TP2501 Y
H.P.F.
2MHz
430KHz
B.P.F.
320KHz
B.P.F.
320KHz
B.P.F.
BUFFER
Q2502 (2/2)
INV. CLIP
x6
x2
CLIP 180mV
DIVISION (A/B)
GATE
PEAK HOLD (H)
PEAK HOLD (V)
SAMPLE HOLD
X (-2)
ABSOL.
SP V.CLR
GP CP
CW
SELECT
1.2V
COMP
CLAMP
REF 3.6V
V REF
IC2501 LD5077 ANALOG IC
TP2504 Ys
Y (GRAY SCALE)
Y (GRAY SCALE)
Ys (GRAY SCALE)
PIEZO (GRAY SCALE)
PIEZO (GRAY SCALE)
BPF OUT (GRAY SCALE) TRIGGER: IC2401 ⑩
BPF OUT (GRAY SCALE) TRIGGER: IC2401 ⑩
Ys (GRAY SCALE)
Ys (GRAY SCALE)
CN2504
Ys
TRAP
7.1MHz
AMP
Q2501 (2/2)
BUFFER
Q2501 (1/2)
TP2522 PIEZO
CN2510
PIEZO
GND
T2501
VR2502 PIEZO
IC2509 (2/2)
PIEZO 5V
SP+V.CLR
SP
V.CLR
CP
AF GATE PULSE
CW
HIGH BRIGHT DET.
IC2502 MB625184U GATE ARRAY
AF FRAME
HIGH BRIGHT HOLD
AF FRAME ON (H)
V INTERRUPT
HD
VD
CLK 1
CLK 2
PIEZO (GRAY SCALE)
PIEZO 5V
Q2510
Q2509
Q2508
Q2410
Q2409
GND
PIEZO (GRAY SCALE)
GP+CP
CW
TP2506 HD
TP2507 VD
VC2501 CLOCK
IC2510 IC2511 IC2512
PHASE DLAY
IC2508 SC14S66F 15KHz MOD.
IC2509 (1/2)
Q2507
BUFFER
15Hz
15KHz
TO PROCESS 1 P.C.B. CN2102
CN2504
HD
VD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IC1517
MC74HC164FP
8bit SHIFT
REGISTER
1.6μS DL
IC1514
MC74HC164FP
8bit SHIFT
REGISTER
1.6μS DL
IC2515
SC14S66F
DSP ON SW
IC2516
SC14S66F
DSP OFF SW
TP2508
AF FRAME
IC2503
M37450M4
AF MI-COM
X2501
10MHz
ES
(GRAY SCALE IN FOCUS)
ES (LENS CAP)
CU
(GRAY SCALE IN FOCUS)
CU (LENS CAP)
GND
Ys (GRAY SCALE)
15Hz
15KHz
Y IRIS
DSP ON
DSP OFF
X OUT
X IN
DSP SELECT Ⓗ
SLOW EN 2
ES
CU
DA VREF.
AD VREF.
+3.6V
SEL A
SEL B
GAIN CONT.
C-3
GAIN CONT.
VR2503
ES T.H.
ES T.H.
HIGH BRIGHT HOLD
AF FRAME ON Ⓗ
V INTERRUPT
15Hz
15KHz
VD
ZOOM SW 1
ZOOM SW 2
LENS Ⓗ
AF-CS
S-CLOCK
S-DATA OUT
S-DATA IN
LENS-CS
RESET
NTSC PAL
IC2507
RH5RE50A
PIEZO 5V REG.
REG.
PIEZO 5V
Q2506 (2/2)
Q2506 (1/2)
CAMERA 5V
TP2523
S-DATA IN
TP2515
LENS-CS
TP2516
S-DATA OUT
TP2517
S-CLOCK
IC2513
LENS-CS ON
IC2506
INVERTER
IC2505
PST529CMT
RESET
RESET
CAMERA 5V
Q2504
Q2505
CN2511
AF FRAME
DSP SELECT Ⓗ
TO VIDEO P.C.B. CN203
CN2503
SLOW EN 2
FROM PROCESS 2 P.C.B. CN2303
CN2504
CAMERA 5V
CAMERA 5V
-10V
+15V
TO PROCESS 1 P.C.B. CN2102
CN2503
UNREG 6V
CAMERA ON Ⓛ
+15V
CAMERA 5V
P.C.BCESS 2 P.C.B. CN2303
CN2501
UNREG 6V
FROM FUSE BATTERY P.C.B. CN1202
CN2502
CAMERA 5V
+15V
-10V
CAMERA ON Ⓛ
UNREG 6V
CAMERA 5V
TP2520
CAMERA ON Ⓛ
DC/DC
CONVERTER
CN2507
UNREG 6V
FROM FUSE BATTERY P.C.B. CN1203
+3.6
CN2506
ZOOM SW 1
+3.6V
GND
ZOOM SW 1
W
T
CN2505
ZOOM SW 2
+3.6V
GND
ZOOM SW 2
CN2503
LENS Ⓗ
CAMERA 5V
CN2303
LENS Ⓗ
CN2304
LENS Ⓗ
CAMERA 5V
LENS Ⓗ
PROCESS 2 P.C.B.
CN2702
LENS Ⓗ
CAMERA 5V
CN2703
CAMERA 5V
LENS Ⓗ
CAMERA-
KEY 1 P.C.B.
CN2508
V BAT
GND
CN2503
AF-CS
S-CLOCK
S-DATA
S-DATA
TO PROCESS 2 P.C.B. CN2303
CN2509
SCK
DCTL
DLTC
CS

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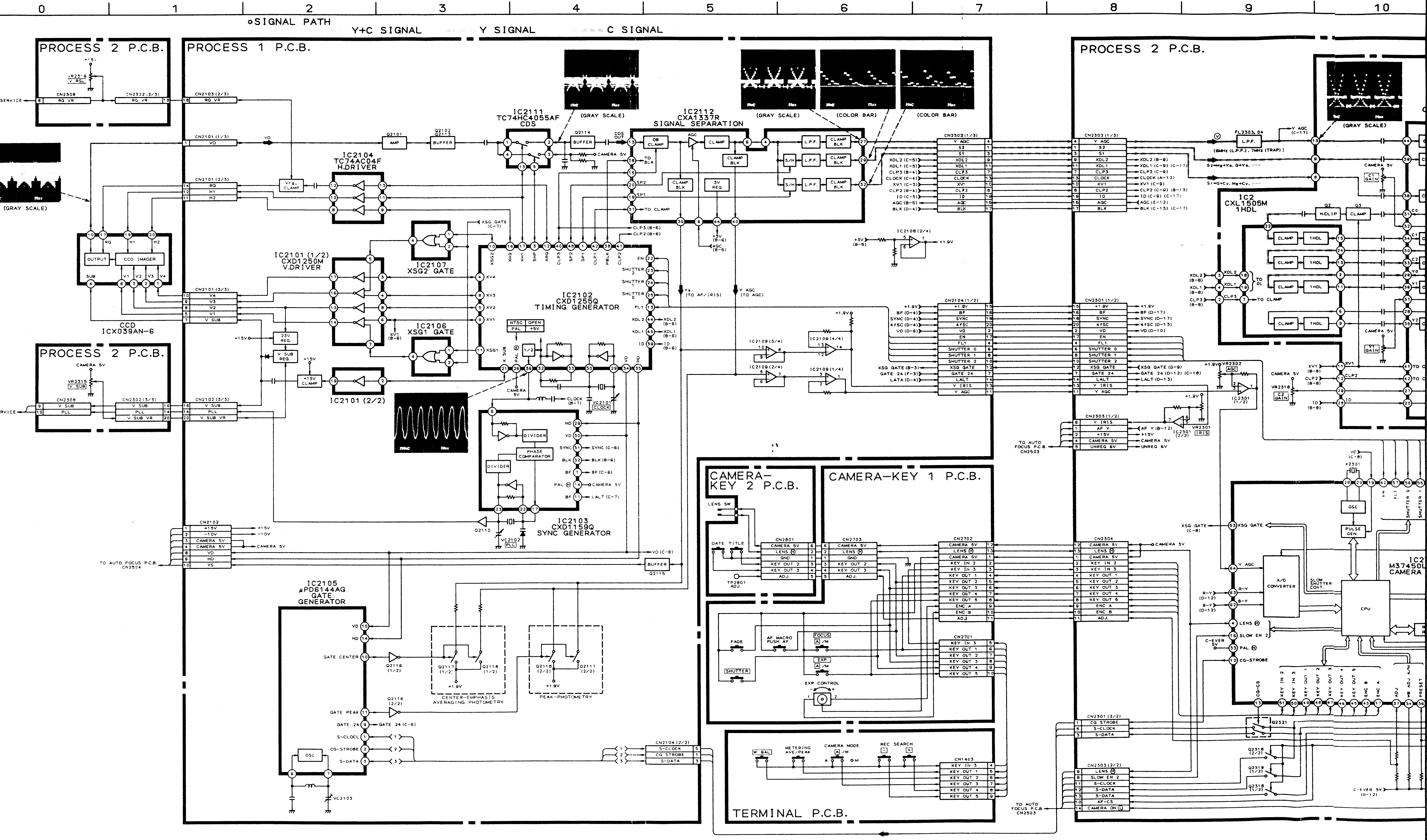
MERA SECTION(PROCESS 1, 2 P.C.B.)



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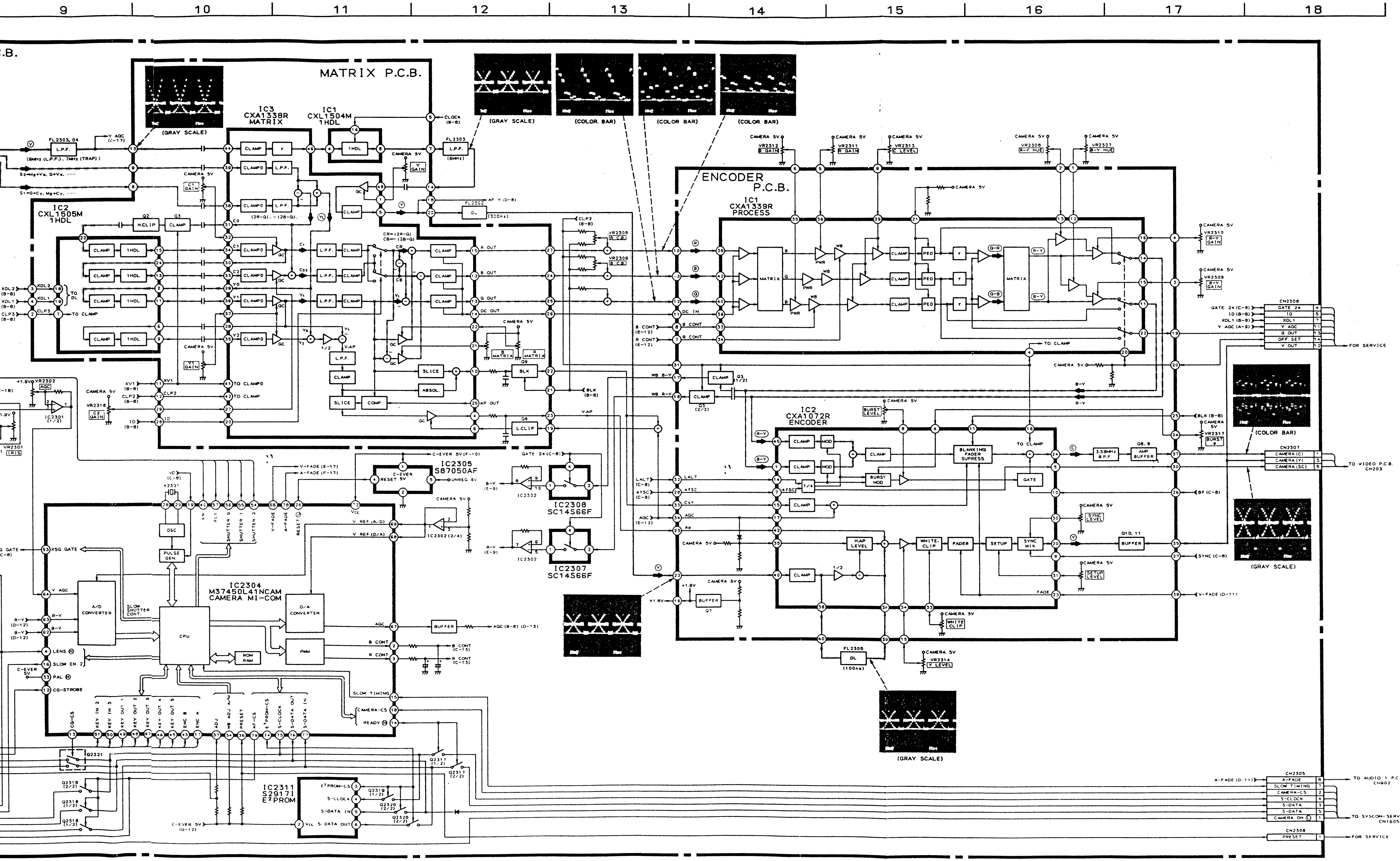
SIGNAL PATH
Y+C SIGNAL
Y SIGNAL
C SIGNAL
PROCESS 2 P.C.B.
PROCESS 1 P.C.B.
PROCESS 2 P.C.B.
PROCESS 2 P.C.B.
(GRAY SCALE)
(GRAY SCALE)
(GRAY SCALE)
(COLOR BAR)
(COLOR BAR)
(GRAY SCALE)
IC2111
TC74HC4055AF
CDS
IC2112
CXA1337R
SIGNAL SEPARATION
IC2104
TC74AC04F
H.DRIVER
IC2101 (1/2)
CXD1250M
V.DRIVER
IC2101 (2/2)
IC2107
XSG2 GATE
IC2106
XSG1 GATE
IC2102
CXD1255Q
TIMING GENERATOR
IC2103
CXD1159Q
SYNC GENERATOR
IC2105
μPD6144AG
GATE
GENERATOR
CCD
ICX039AN-6
CCD IMAGER
OUTPUT
IC2
CXL1505M
1HDL
CLAMP
1HDL
H.CLIP
A/D CONVERTER
CPU
IC2
M37450
CAMERA
CAMERA-KEY 2 P.C.B.
CAMERA-KEY 1 P.C.B.
TERMINAL P.C.B.
CENTER-EMPHASIS AVERAGING PHOTOMETRY
PEAK-PHOTOMETRY
TO AUTO FOCUS P.C.B. CN2504
TO AUTO FOCUS P.C.B. CN2503
TO AUTO FOCUS P.C.B. CN2503
LENS SW
DATE
TITLE
TP2801 ADJ.
FADE
AF MACRO PUSH AF
FOCUS
EXP
SHUTTER
EXP CONTROL
W.BAL
METERING AVE/PEAK
CAMERA MODE
REC SEARCH
SERVICE
SERVICE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MATRIX P.C.B.
IC3 CXA1338R MATRIX
IC1 CXL1504M 1HDL
IC2 CXL1505M 1HDL
ENCODER P.C.B.
IC1 CXA1339R PROCESS
IC2 CXA1072R ENCODER
IC2305 S87050AF
IC2308 SC14S66F
IC2307 SC14S66F
IC2304 M37450L41NCAM CAMERA MI-COM
IC2311 S29171 E²PROM
(GRAY SCALE)
(COLOR BAR)
CN2308
CN2307
CN2305
TO VIDEO P.C.B. CN203
TO AUDIO 1 P.C.B CN902
TO SYSCON-SERVO P.C.B CN1605
FOR SERVICE

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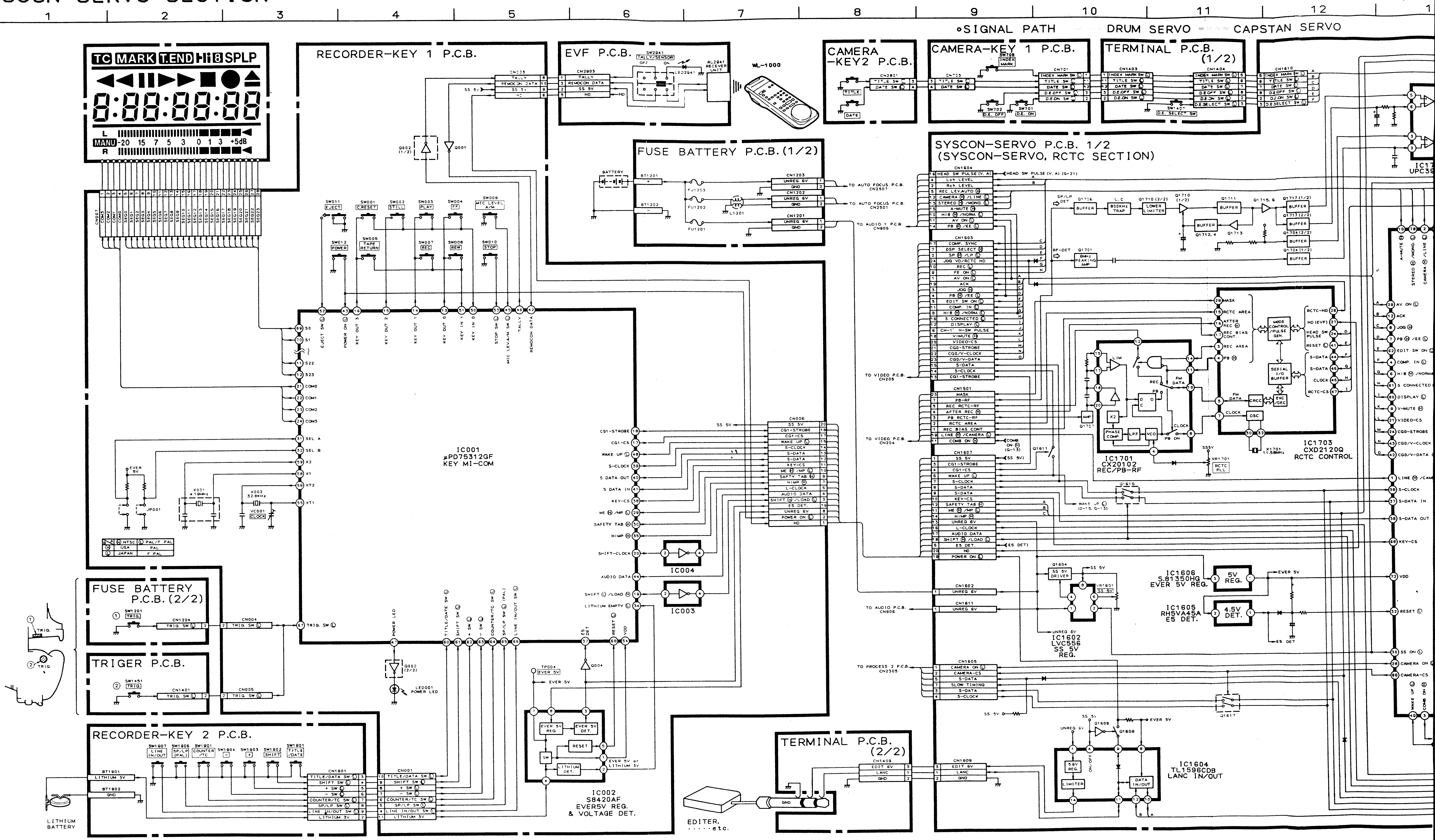
SCON-SERVO SECTION



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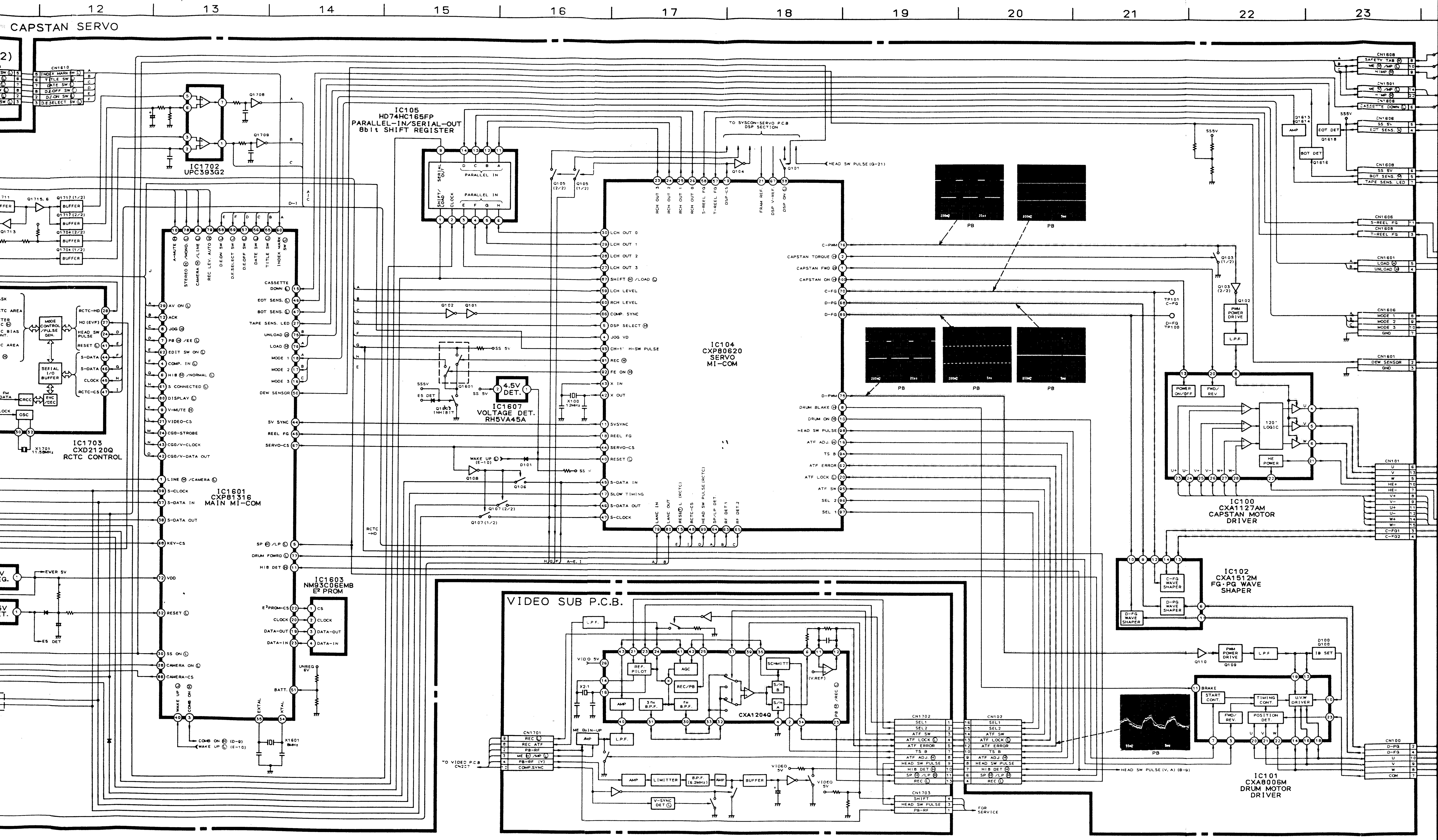
∘SIGNAL PATH
DRUM SERVO
CAPSTAN SERVO
TC MARK T.END Hi8 SPLP
MANU -20 15 7 5 3 0 1 3 +5dB
RECORDER-KEY 1 P.C.B.
EVF P.C.B.
WL-1000
CAMERA -KEY2 P.C.B.
CAMERA-KEY 1 P.C.B.
TERMINAL P.C.B. (1/2)
FUSE BATTERY P.C.B.(1/2)
SYSCON-SERVO P.C.B. 1/2 (SYSCON-SERVO, RCTC SECTION)
IC001 μPD75312GF KEY MI-COM
IC004
IC003
IC002 S8420AF EVER5V REG. & VOLTAGE DET.
IC1701 CX20102 REC/PB-RF
IC1703 CXD2120Q RCTC CONTROL
IC1606 S.81350HG EVER 5V REG.
IC1605 RH5VA45A E5 DET.
IC1602 LVC556 SS 5V REG.
IC1604 TL1596CDB LANC IN/OUT
FUSE BATTERY P.C.B.(2/2)
TRIGER P.C.B.
RECORDER-KEY 2 P.C.B.
TERMINAL P.C.B. (2/2)
EDITER, ...etc.
LITHIUM BATTERY
TO AUTO FOCUS P.C.B. CN2507
TO AUTO FOCUS P.C.B. CN2501
TO AUDIO 1 P.C.B. CN905
TO VIDEO P.C.B. CN205
TO VIDEO P.C.B. CN204
TO AUDIO P.C.B. CN906
TO PROCESS 2 P.C.B. CN2305

1 Nov. 1993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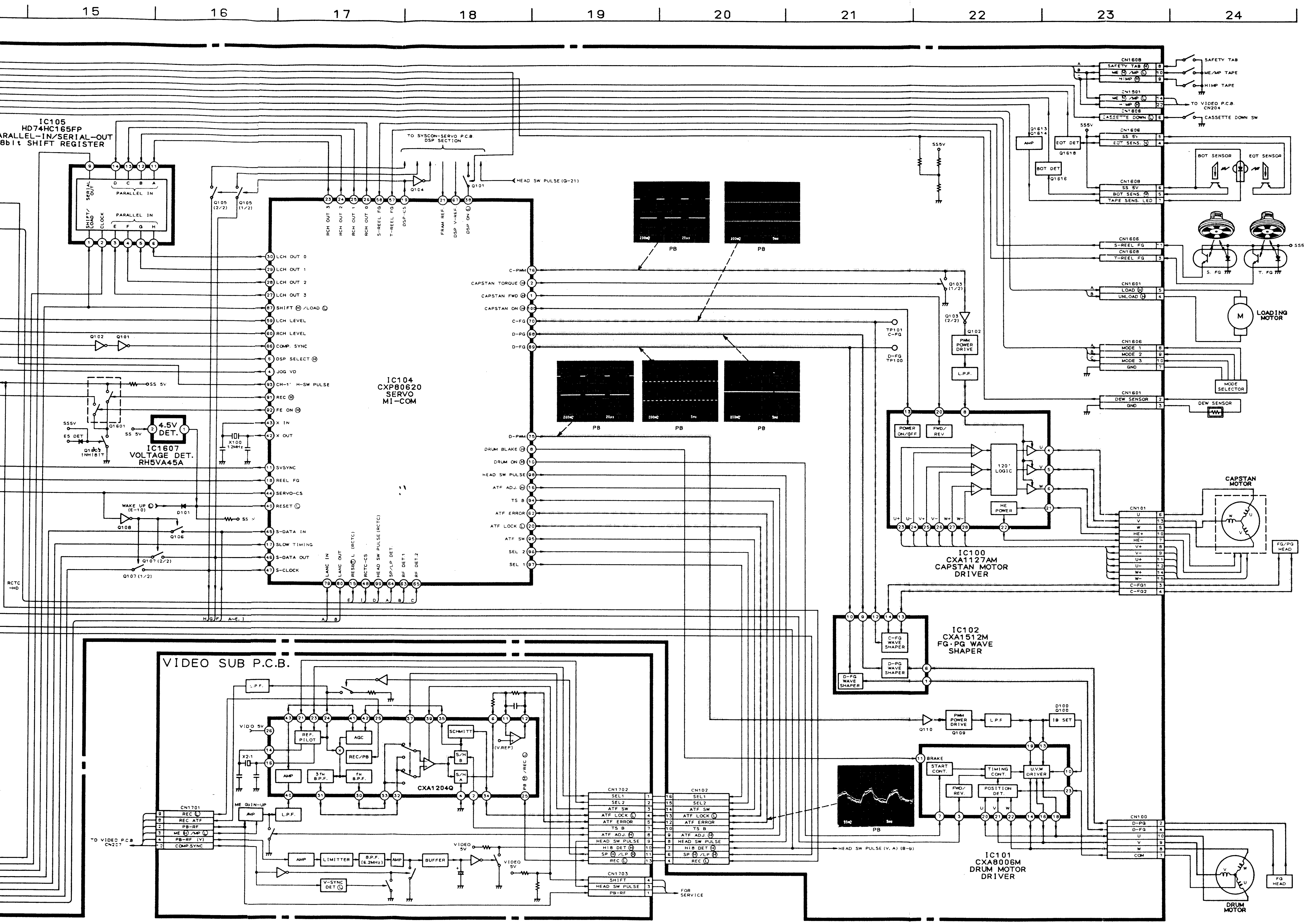
CAPSTAN SERVO
CN1610
INDEX MARK SW
TITLE SW
DATE SW
D.E.OFF SW
D.E.ON SW
D.E.SELECT SW
IC1702
UPC393G2
Q1708
Q1709
IC105
HD74HC165FP
PARALLEL-IN/SERIAL-OUT
8bit SHIFT REGISTER
SERIAL OUT
SHIFT/LOAD
CLOCK
PARALLEL IN
TO SYSCON-SERVO P.C.B DSP SECTION
HEAD SW PULSE (G-21)
Q104
Q101
Q105 (2/2)
Q105 (1/2)
BUFFER
Q1713
Q1715, 6
Q1717 (1/2)
Q1717 (2/2)
Q1704 (1/2)
Q1704 (2/2)
IC1703
CXD2120Q
RCTC CONTROL
MODE CONTROL /PULSE GEN.
SERIAL I/O BUFFER
ENC /DEC
CRCC
OSC
X1701 11.58MHz
RCTC-HD
HD (EVF)
HEAD SW PULSE
RESET
S-DATA
CLOCK
RCTC-CS
A-MUTE
STEREO /MONO.
CAMERA /LINE
REC LEV. AUTO
D.E.ON SW
D.E.SELECT SW
D.E.OFF SW
DATE SW
TITLE SW
INDEX MARK SW
CASSETTE DOWN
EOT SENS.
BOT SENS.
TAPE SENS. LED
UNLOAD
LOAD
MODE 1
MODE 2
MODE 3
DEW SENSOR
SV SYNC
REEL FG
SERVO-CS
AV ON
ACK
JOG
PB /EE
EDIT SW ON
COMP. IN
H18 /NORMAL
S CONNECTED
DISPLAY
V-MUTE
VIDEO-CS
CG0-STROBE
CG0/V-CLOCK
CG0/V-DATA OUT
LINE /CAMERA
S-CLOCK
S-DATA IN
S-DATA OUT
KEY-CS
VDD
RESET
SS ON
CAMERA ON
CAMERA-CS
WAKE UP
COMB ON
EXTAL
XTAL
X1601 8MHz
COMB ON (D-9)
WAKE UP (E-10)
IC1601
CXP81316
MAIN MI-COM
SP /LP
DRUM FOWRD
H18 DET
IC1603
NM93C06EMB
E²PROM
E²PROM-CS
DATA-OUT
DATA-IN
CS
UNREG 6V
BATT.
EVER 5V
ES DET
Q102
Q101
SS 5V
SS5V
Q1601
Q1603 INHIBIT
IC1607
VOLTAGE DET.
RH5VA45A
4.5V DET.
WAKE UP (E-10)
D101
Q108
Q106
Q107 (2/2)
Q107 (1/2)
RCTC -HD
X100 12MHz
RCH OUT 3
RCH OUT 2
RCH OUT 1
RCH OUT 0
S-REEL FG
T-REEL FG
DSP-CS
FRAM REF.
DSP V-REF.
DSP ON
LCH OUT 0
LCH OUT 1
LCH OUT 2
LCH OUT 3
SHIFT /LOAD
LCH LEVEL
RCH LEVEL
COMP. SYNC
DSP SELECT
JOG VD
CH-1' H-SW PULSE
REC
FE ON
X IN
X OUT
SVSYNC
REEL FG
SERVO-CS
RESET
S-DATA IN
SLOW TIMING
S-DATA OUT
S-CLOCK
IC104
CXP80620
SERVO
MI-COM
LANC IN
LANC OUT
RESET L (RCTC)
RCTC-CS
HEAD SW PULSE (RCTC)
SP/LP DET
RF DET 1
RF DET 2
C-PWM
CAPSTAN TORQUE
CAPSTAN FWD
CAPSTAN ON
C-FG
D-PG
D-FG
D-PWM
DRUM BLAKE
DRUM ON
HEAD SW PULSE
ATF ADJ.
TS B
ATF ERROR
ATF LOCK
ATF SW
SEL 2
SEL 1
PB
TP101 C-FG
TP100 D-FG
Q103 (1/2)
Q103 (2/2)
Q102
PWM POWER DRIVE
L.P.F.
POWER ON/OFF
FWD/ REV
120° LOGIC
HE POWER
IC100
CXA1127AM
CAPSTAN MOTOR DRIVER
CN1608
SAFETY TAB
ME /MP
HIMP
CN1501
CASSETTE DOWN
CN1606
SS 5V
EOT SENS.
BOT SENS.
TAPE SENS. LED
S-REEL FG
T-REEL FG
CN1601
LOAD
UNLOAD
MODE 1
MODE 2
MODE 3
GND
DEW SENSOR
Q1613 Q1614
AMP
EOT DET
Q1618
BOT DET
Q1616
CN101
U
V
W
HE+
HE-
V+
V-
U+
U-
W+
W-
C-FG1
C-FG2
IC102
CXA1512M
FG·PG WAVE SHAPER
C-FG WAVE SHAPER
D-PG WAVE SHAPER
D-FG WAVE SHAPER
VIDEO SUB P.C.B.
L.P.F.
REF. PILOT
AGC
REC/PB
AMP
3 fH B.P.F.
fH B.P.F.
SCHMITT
S/H B
S/H A
(V.REF)
CXA1204Q
VIDO 5V
X2-1
ME GAIN-UP
CN1701
REC
REC ATF
PB-RF
ME /MP
PB-RF (Y)
COMP.SYNC
TO VIDEO P.C.B CN227
AMP
LIMITTER
B.P.F. (6.2MHz)
BUFFER
VIDEO 5V
V-SYNC DET
CN1702
SEL1
SEL2
ATF SW
ATF LOCK
ATF ERROR
TS B
ATF ADJ.
HEAD SW PULSE
H18 DET
SP /LP
REC
CN1703
SHIFT
HEAD SW PULSE
PB-RF
FOR SERVICE
CN102
HEAD SW PULSE (V, A) (B-9)
Q110
PWM POWER DRIVE
Q109
L.P.F
D100 Q100
18 SET
BRAKE
START CONT.
TIMING CONT.
U.V.W DRIVER
FWD/ REV.
POSITION DET
IC101
CXA8006M
DRUM MOTOR
DRIVER
CN100
D-PG
D-FG
COM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IC105
HD74HC165FP
ARALLEL-IN/SERIAL-OUT
8bit SHIFT REGISTER
SERIAL OUT
PARALLEL IN
SHIFT/LOAD
CLOCK
Q105 (2/2)
Q105 (1/2)
TO SYSCON-SERVO P.C.B DSP SECTION
Q104
Q101
HEAD SW PULSE (G-21)
RCH OUT 3
RCH OUT 2
RCH OUT 1
RCH OUT 0
S-REEL FG
T-REEL FG
DSP-CS
FRAM REF.
DSP V-REF.
DSP ON
LCH OUT 0
LCH OUT 1
LCH OUT 2
LCH OUT 3
SHIFT (H)/LOAD (L)
LCH LEVEL
RCH LEVEL
COMP. SYNC
DSP SELECT (H)
JOG VD
CH-1' H-SW PULSE
REC (H)
FE ON (H)
X IN
X OUT
X100 12MHz
SVSYNC
REEL FG
SERVO-CS
RESET (L)
S-DATA IN
SLOW TIMING
S-DATA OUT
S-CLOCK
Q102
Q101
S5 5V
S5 5V
ES DET
Q1601
Q1603 INHIBIT
4.5V DET.
IC1607
VOLTAGE DET.
RH5VA45A
WAKE UP (L) (E-10)
D101
Q108
Q106
Q107 (2/2)
Q107 (1/2)
RCTC -HD
IC104
CXP80620
SERVO
MI-COM
C-PWM
CAPSTAN TORQUE (H)
CAPSTAN FWD (H)
CAPSTAN ON (H)
C-FG
D-PG
D-FG
D-PWM
DRUM BLAKE (H)
DRUM ON (H)
HEAD SW PULSE
ATF ADJ. (H)
TS B
ATF ERROR
ATF LOCK (L)
ATF SW
SEL 2
SEL 1
LANC IN
LANC OUT
RESET (L) (RCTC)
RCTC-CS
HEAD SW PULSE (RCTC)
SP/LP DET.
RF DET 1
RF DET 2
PB
PB
PB
PB
PB
Q103 (1/2)
Q103 (2/2)
Q102
TP101 C-FG
D-FG TP100
PWM POWER DRIVE
L.P.F.
POWER ON/OFF
FWD/REV
120° LOGIC
HE POWER
IC100
CXA1127AM
CAPSTAN MOTOR
DRIVER
IC102
CXA1512M
FG·PG WAVE
SHAPER
C-FG WAVE SHAPER
D-PG WAVE SHAPER
D-FG WAVE SHAPER
Q110
PWM POWER DRIVE
Q109
L.P.F
D100 Q100
18 SET
BRAKE
START CONT.
TIMING CONT.
U.V.W DRIVER
FWD/REV.
POSITION DET.
IC101
CXA8006M
DRUM MOTOR
DRIVER
CN1608
SAFETY TAB (H)
ME (H) /MP (L)
HIMP (H)
CN1501
ME (H) /MP (L)
MP (H)
CN1606
CASSETTE DOWN (L)
SAFETY TAB
ME/MP TAPE
HIMP TAPE
TO VIDEO P.C.B. CN204
CASSETTE DOWN SW
Q1613 Q1614
AMP
EOT DET
Q1618
BOT DET
Q1616
S5 5V
EOT SENS. (L)
BOT SENSOR
EOT SENSOR
BOT SENS. (H)
TAPE SENS. LED
S-REEL FG
T-REEL FG
S. FG
T. FG
S5 5V
CN1601
LOAD (H)
UNLOAD (H)
LOADING MOTOR
MODE 1
MODE 2
MODE 3
GND
MODE SELECTOR
DEW SENSOR
GND
DEW SENSOR
CAPSTAN MOTOR
CN101
FG/PG HEAD
C-FG1
C-FG2
CN100
D-PG
D-FG
COM
FG HEAD
DRUM MOTOR
VIDEO SUB P.C.B.
L.P.F.
VIDEO 5V
X2.1
REF. PILOT
AGC
REC/PB
SCHMITT
(V.REF)
S/H B
S/H A
AMP
3fH B.P.F.
fH B.P.F.
CXA1204Q
PB (H) /REC (L)
CN1701
REC (L)
REC ATF
PB-RF
ME (H) /MP (L)
PB-RF (Y)
COMP.SYNC
TO VIDEO P.C.B CN227
ME GAIN-UP
AMP
L.P.F.
AMP
LIMITTER
B.P.F. (6.2MHz)
AMP
BUFFER
VIDEO 5V
VIDEO 5V
V-SYNC DET
CN1702
SEL1
SEL2
ATF SW
ATF LOCK (L)
ATF ERROR
TS B
HEAD SW PULSE
HI8 DET (H)
SP (H) /LP (L)
REC (L)
CN1703
SHIFT
HEAD SW PULSE
PB-RF
FOR SERVICE
CN102
SEL1
SEL2
ATF SW
ATF LOCK (L)
ATF ERROR
TS B
ATF ADJ. (H)
HEAD SW PULSE
HI8 DET (H)
SP (H) /LP (L)
REC (L)
HEAD SW PULSE (V, A) (B-9)

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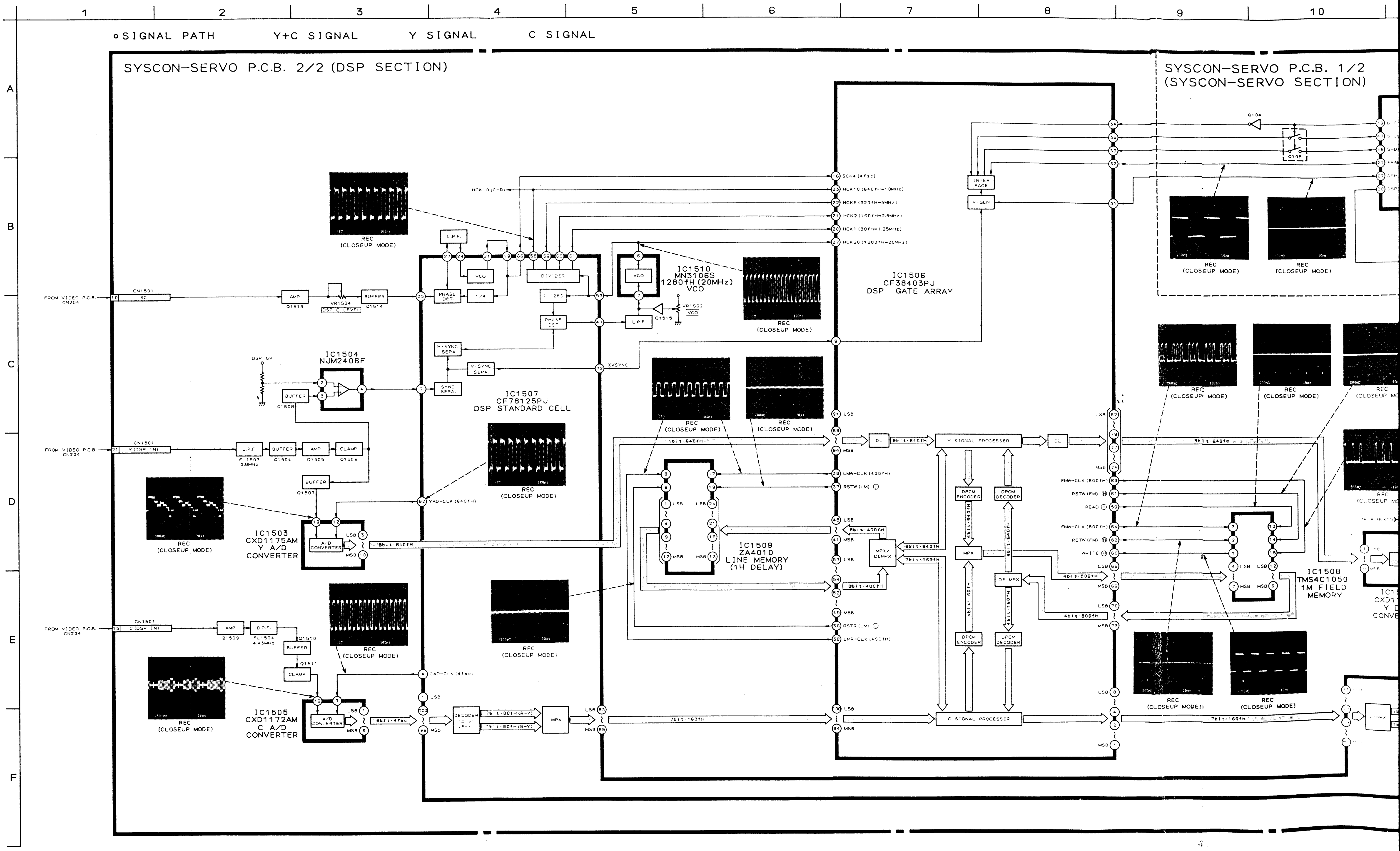
DIGITAL-SIGNAL-PROCESS SECTION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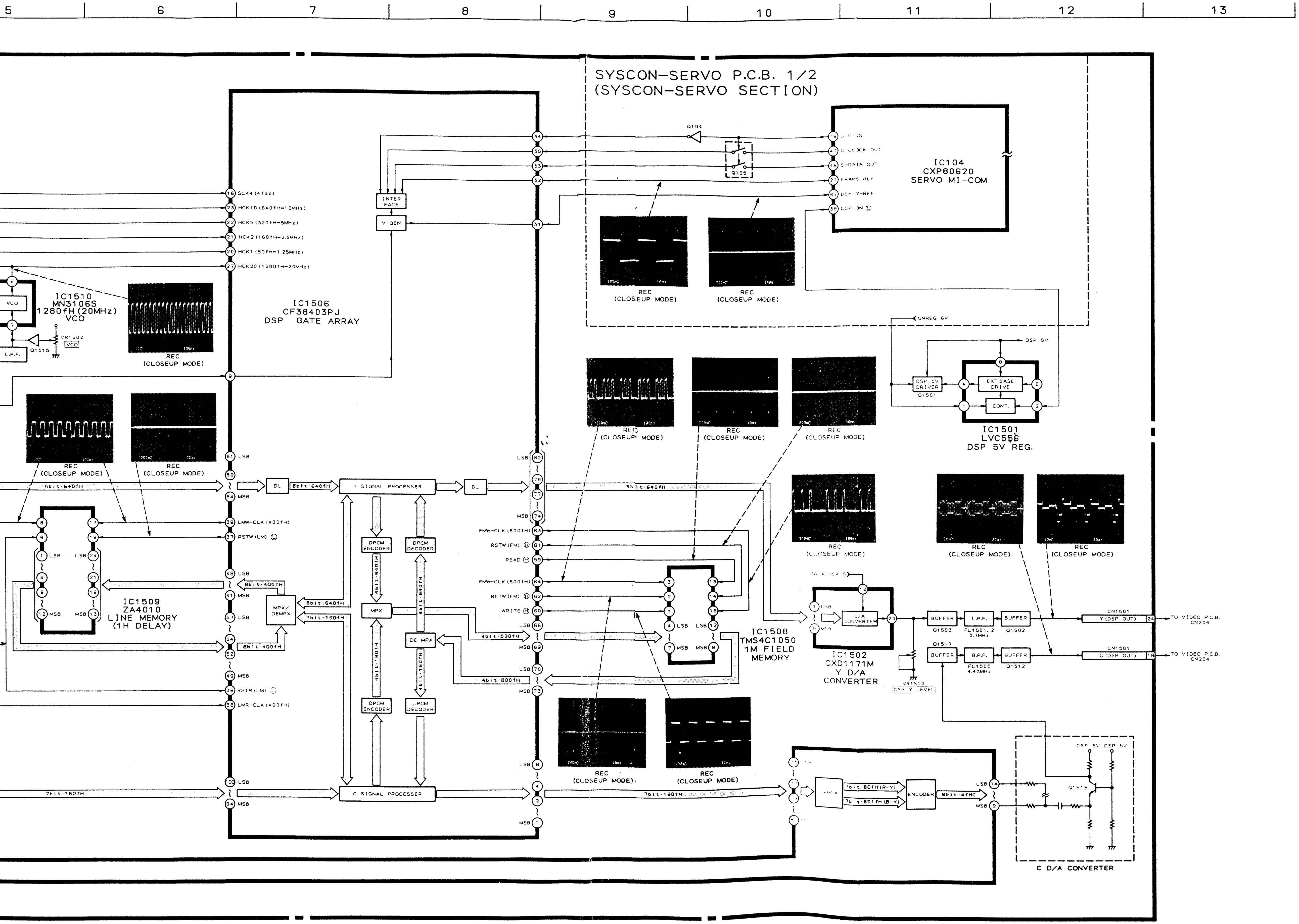
A
B
C
D
E
F
○SIGNAL PATH
Y+C SIGNAL
Y SIGNAL
C SIGNAL
SYSCON-SERVO P.C.B. 2/2 (DSP SECTION)
SYSCON-SERVO P.C.B. 1/2 (SYSCON-SERVO SECTION)
FROM VIDEO P.C.B. CN204
CN1501
SC
Y (DSP IN)
C (DSP IN)
AMP
Q1513
VR1504
DSP C LEVEL
BUFFER
Q1514
L.P.F.
FL1503 3.58MHz
Q1504
Q1505
CLAMP
Q1506
Q1507
Q1508
Q1509
B.P.F.
FL1504 4.43MHz
Q1510
Q1511
DSP 5V
IC1504
NJM2406F
IC1503
CXD1175AM
Y A/D CONVERTER
A/D CONVERTER
IC1505
CXD1172AM
C A/D CONVERTER
8bit·640fH
6bit·4fsc
IC1507
CF78125PJ
DSP STANDARD CELL
VCO
DIVIDER
PHASE DET.
1/4
1/1280
H-SYNC SEPA.
V-SYNC SEPA.
SYNC SEPA.
XVSYNC
VAD-CLK (640fH)
CAD-CLK (4fsc)
DECODER (R-Y) (B-Y)
7bit·80fH (R-Y)
7bit·80fH (B-Y)
MPX
HCK10 (C-9)
IC1510
MN3106S
1280fH (20MHz)
VCO
VR1502
VCO
Q1515
IC1506
CF38403PJ
DSP GATE ARRAY
SCK4 (4fsc)
HCK10 (640fH=10MHz)
HCK5 (320fH=5MHz)
HCK2 (160fH=2.5MHz)
HCK1 (80fH=1.25MHz)
HCK20 (1280fH=20MHz)
LMW-CLK (400fH)
RSTW (LM)
RSTR (LM)
LMR-CLK (400fH)
IC1509
ZA4010
LINE MEMORY
(1H DELAY)
8bit·400fH
8bit·640fH
7bit·160fH
MPX/DEMPX
DL
Y SIGNAL PROCESSER
C SIGNAL PROCESSER
DPCM ENCODER
DPCM DECODER
DE MPX
4bit·640fH
4bit·160fH
4bit·800fH
FMW-CLK (800fH)
RSTW (FM)
READ
RETW (FM)
WRITE
IC1508
TMS4C1050
1M FIELD MEMORY
INTER FACE
V-GEN
Q104
Q105
LSB
MSB
REC
(CLOSEUP MODE)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SYSCON–SERVO P.C.B. 1/2
(SYSCON–SERVO SECTION)
Q104
Q105
IC104
CXP80620
SERVO MI–COM
S-DATA OUT
FRAME REF
DSP V-REF
INTER FACE
V·GEN
SCK4 (4fsc)
HCK10 (640fH=10MHz)
HCK5 (320fH=5MHz)
HCK2 (160fH=2.5MHz)
HCK1 (80fH=1.25MHz)
HCK20 (1280fH=20MHz)
IC1510
MN3106S
1280fH (20MHz)
VCO
L.P.F.
Q1515
VR1502
VCO
IC1506
CF38403PJ
DSP GATE ARRAY
REC
(CLOSEUP MODE)
UNREG 6V
DSP 5V
DSP 5V DRIVER
Q1501
EXT.BASE DRIVE
CONT.
IC1501
LVC556
DSP 5V REG.
LSB
MSB
8bit·640fH
DL
Y SIGNAL PROCESSER
LMW-CLK (400fH)
RSTW (LM) Ⓛ
8bit·400fH
MPX/DEMPX
7bit·160fH
IC1509
ZA4010
LINE MEMORY
(1H DELAY)
RSTR (LM) Ⓛ
LMR-CLK (400fH)
DPCM ENCODER
DPCM DECODER
MPX
DE MPX
4bit·640fH
4bit·160fH
4bit·800fH
FMW-CLK (800fH)
RSTW (FM) Ⓗ
READ Ⓗ
RETW (FM) Ⓗ
WRITE Ⓗ
IC1508
TMS4C1050
1M FIELD
MEMORY
(A-4) HCK10
D/A CONVERTER
IC1502
CXD1171M
Y D/A
CONVERTER
VR1503
DSP Y LEVEL
BUFFER
Q1503
L.P.F.
FL1501, 2
3.7MHz
Q1502
Q1517
B.P.F.
FL1505
4.43MHz
Q1512
CN1501
Y (DSP OUT)
C (DSP OUT)
TO VIDEO P.C.B. CN204
C SIGNAL PROCESSER
7bit·160fH
7bit·80fH (R-Y)
7bit·80fH (B-Y)
ENCODER
8bit·4fHC
Q1518
C D/A CONVERTER

V-7

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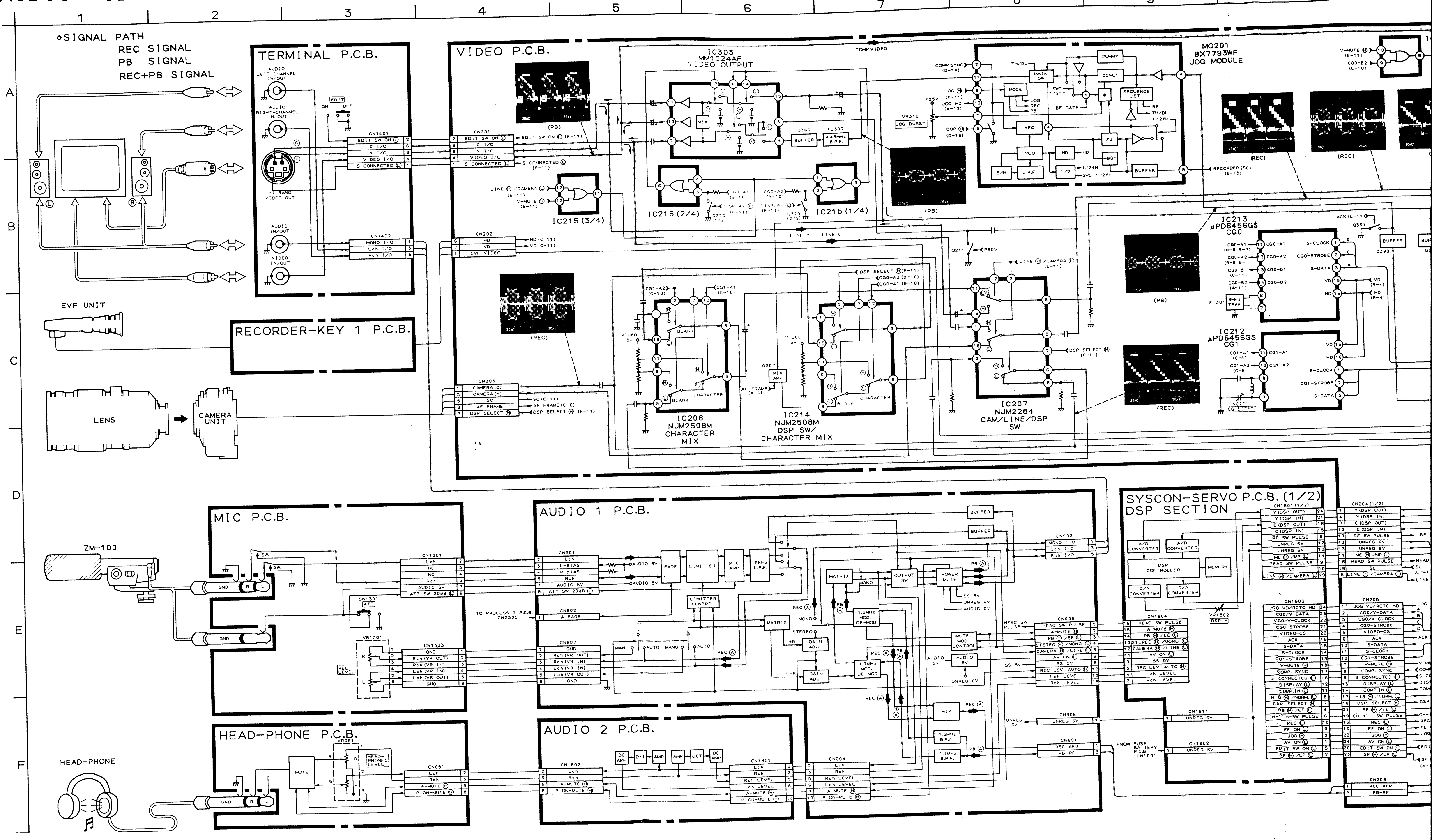
AUDIO–VIDEO SECTION



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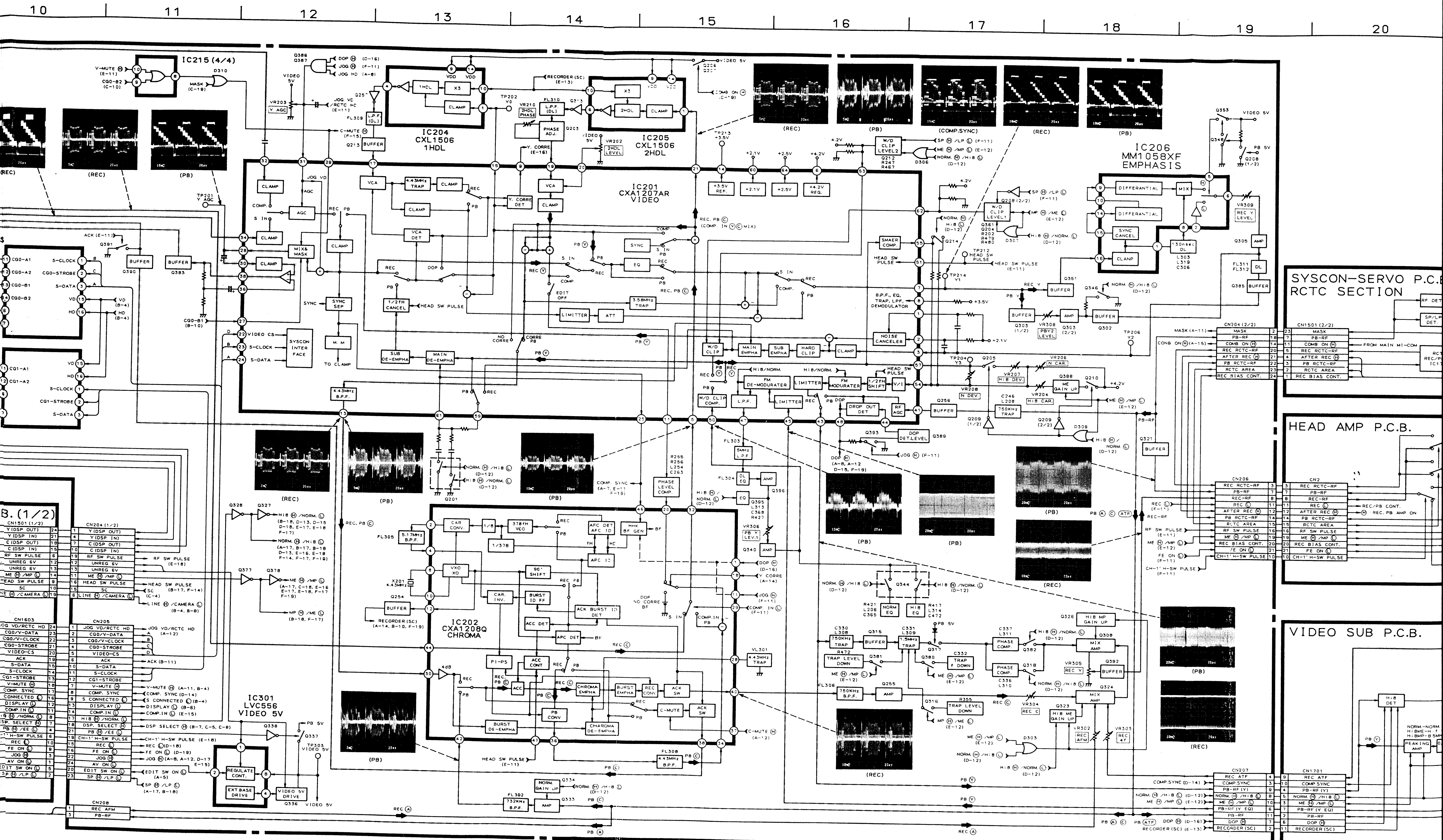
A
B
C
D
E
F
SIGNAL PATH
REC SIGNAL
PB SIGNAL
REC+PB SIGNAL
TERMINAL P.C.B.
AUDIO LEFT-CHANNEL IN/OUT
AUDIO RIGHT-CHANNEL IN/OUT
HI BAND VIDEO OUT
AUDIO IN/OUT
VIDEO IN/OUT
EDIT
ON
OFF
CN1401
EDIT SW ON Ⓛ
C I/O
Y I/O
VIDEO I/O
S CONNECTED Ⓛ
CN1402
MONO I/O
Lch I/O
Rch I/O
EVF UNIT
RECORDER-KEY 1 P.C.B.
LENS
CAMERA UNIT
VIDEO P.C.B.
CN201
CN202
HD
VD
EVF VIDEO
CN203
CAMERA (C)
CAMERA (Y)
SC
AF FRAME
DSP SELECT Ⓗ
(PB)
(REC)
IC303
MM1024AF
VIDEO OUTPUT
Q360
BUFFER
FL307
4.43MHz B.P.F.
IC215 (3/4)
IC215 (2/4)
IC215 (1/4)
LINE Ⓗ /CAMERA Ⓛ
V-MUTE Ⓗ
IC208
NJM2508M
CHARACTER MIX
IC214
NJM2508M
DSP SW/
CHARACTER MIX
BLANK
CHARACTER
Q397
MIX AMP
IC207
NJM2284
CAM/LINE/DSP SW
COMP.VIDEO
VR310
JOG BURST
MAIN SW
MODE
AFC
VCO
S/H
L.P.F.
1/2
HD
-90°
X2
BUFFER
DUMMY
SEQUENCE DET.
BF GATE
MO201
BX7793WF
JOG MODULE
RECORDER (SC)
IC213
μPD6456GS
CG0
IC212
μPD6456GS
CG1
FL301
8MHz TRAP
Q390
BUFFER
S-CLOCK
CG0-STROBE
S-DATA
CG1-STROBE
VC201
CG SIZE
Q211
PB5V
ACK
MIC P.C.B.
ZM-100
CN1301
SW1301
ATT
VR1301
REC LEVEL
CN1303
GND
AUDIO 1 P.C.B.
CN901
Lch
Rch
L-BIAS
R-BIAS
AUDIO 5V
ATT SW 20dB Ⓛ
FADE
LIMITTER
MIC AMP
15KHz L.P.F.
LIMITTER CONTROL
CN902
A-FADE
TO PROCESS 2 P.C.B. CN2305
CN907
Rch (VR OUT)
Lch (VR OUT)
MANU.
AUTO
MATRIX
GAIN ADJ.
1.5MHz MOD. DE-MOD
1.7MHz MOD. DE-MOD
OUTPUT SW
POWER MUTE
MUTE/MOD. CONTROL
AUDIO 5V
MIX
1.5MHz B.P.F.
1.7MHz B.P.F.
BUFFER
CN903
CN905
HEAD SW PULSE
A-MUTE Ⓗ
PB Ⓗ /EE Ⓛ
STEREO Ⓗ /MONO Ⓛ
CAMERA Ⓗ /LINE Ⓛ
AV ON Ⓛ
SS 5V
REC LEV. AUTO Ⓗ
Lch LEVEL
Rch LEVEL
CN906
UNREG 6V
CN801
REC AFM
PB-RF
HEAD-PHONE P.C.B.
VR051
HEAD-PHONES LEVEL
MUTE
CN051
P ON-MUTE Ⓗ
HEAD-PHONE
AUDIO 2 P.C.B.
CN1802
DC AMP
DET
AMP
CN1801
CN904
SYSCON-SERVO P.C.B. (1/2)
DSP SECTION
A/D CONVERTER
DSP CONTROLLER
MEMORY
D/A CONVERTER
VR1502
DSP Y
CN1501 (1/2)
CN1604
CN1603
CN1611
CN1602
FROM FUSE BATTERY P.C.B. CN1901
CN204 (1/2)
CN205
CN208
Y (DSP OUT)
Y (DSP IN)
C (DSP OUT)
C (DSP IN)
RF SW PULSE
UNREG 6V
ME Ⓗ /MP Ⓛ
HEAD SW PULSE
LINE Ⓗ /CAMERA Ⓛ
JOG VD/RCTC HD
CG0/V-DATA
CG0/V-CLOCK
CG0-STROBE
VIDEO-CS
ACK
S-DATA
S-CLOCK
CG1-STROBE
V-MUTE Ⓗ
COMP. SYNC
S CONNECTED Ⓛ
DISPLAY Ⓗ
COMP.IN Ⓛ
HIB Ⓗ /NORM. Ⓛ
DSP. SELECT Ⓗ
PB Ⓗ /EE Ⓛ
CH-1 H-SW PULSE
REC Ⓛ
FE ON Ⓛ
JOG Ⓗ
AV ON Ⓛ
EDIT SW ON Ⓛ
SP Ⓗ /LP Ⓛ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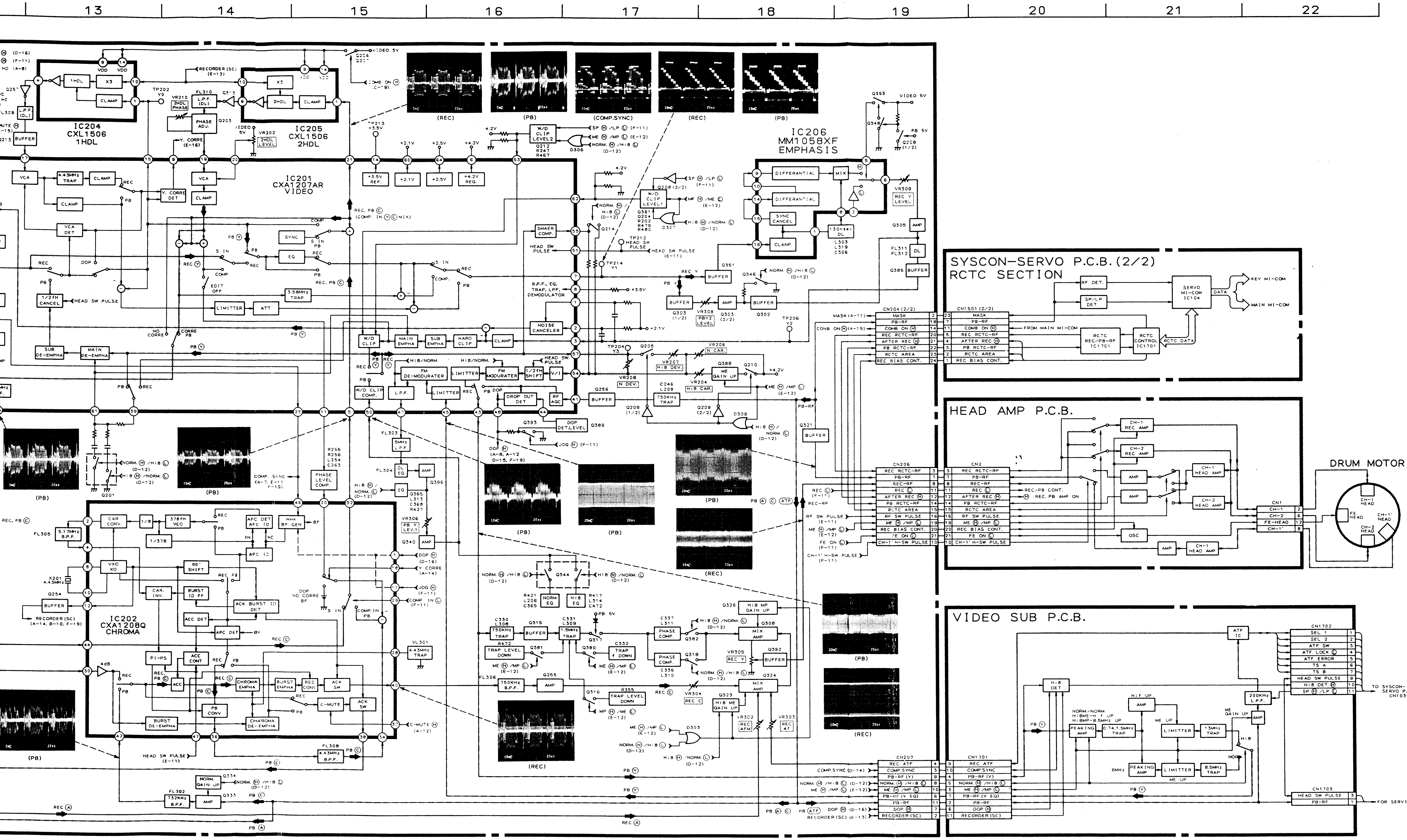
IC215 (4/4)
IC204
CXL1506
1HDL
IC205
CXL1506
2HDL
IC201
CXA1207AR
VIDEO
IC206
MM1058XF
EMPHASIS
IC202
CXA1208Q
CHROMA
IC301
LVC556
VIDEO 5V
SYSCON-SERVO P.C.B
RCTC SECTION
HEAD AMP P.C.B.
VIDEO SUB P.C.B.
B.(1/2)
CN1501 (1/2)
CN204 (1/2)
CN1603
CN205
CN208
CN204 (2/2)
CN206
CN207
CN1701
CN2
(REC)
(PB)
(COMP.SYNC)


13
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18
19
20
21
22
IC204
CXL1506
1HDL
IC205
CXL1506
2HDL
IC201
CXA1207AR
VIDEO
IC206
MM1058XF
EMPHASIS
IC202
CXA1208Q
CHROMA
(REC)
(PB)
(COMP.SYNC)
SYSCON-SERVO P.C.B.(2/2)
RCTC SECTION
HEAD AMP P.C.B.
VIDEO SUB P.C.B.
DRUM MOTOR
CN204 (2/2)
CN1501 (2/2)
CN206
CN2
CN1
CN207
CN1701
CN1702
CN1703
SERVO MI-COM IC104
KEY MI-COM
MAIN MI-COM
RCTC REC/PB-RF IC1701
RCTC CONTROL IC1701
FROM MAIN MI-COM
TO SYSCON-SERVO P.C.B. CN103
FOR SERVICE
VIDEO 5V
PB 5V
FM DE-MODURATER
FM MODURATER
LIMITTER
NOISE CANCELER
SMAER COMP.
HEAD SW PULSE
W/D CLIP LEVEL1
W/D CLIP LEVEL2
DIFFERANTIAL
SYNC CANCEL
CLAMP
BUFFER
AMP
VCA
VCA DET
MAIN EMPHA
SUB EMPHA
HARD CLIP
MAIN DE-EMPHA
SUB DE-EMPHA
1/2fH CANCEL
DROP OUT DET
RF AGC
DOP DET.LEVEL
CAR CONV.
378fH VCO
AFC DET AFC ID
HHK BF GEN
APC ID
VXO XO
90° SHIFT
BURST ID FF
ACK BURST ID DET
ACC DET
APC DET
CHROMA EMPHA
BURST EMPHA
REC CONV
ACK SW
C-MUTE
PB CONV
CHARGMA DE-EMPHA
BURST DE-EMPHA
750KHz TRAP
1.5MHz TRAP
TRAP LEVEL DOWN
PHASE COMP.
MIX AMP
H18 MP GAIN UP
H18 ME GAIN UP
ATF IC
200KHz L.P.F.
PEAKING AMP
LIMITTER
CH-1 REC AMP
CH-2 REC AMP
CH-1 HEAD AMP
CH-2 HEAD AMP
OSC
FE HEAD
CH-1 HEAD
CH-1' HEAD
CH-2 HEAD

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AUTO FOCUS P.C.B. (COMPONENT SIDE)

< NOTICE >

The AUTO FOCUS P.C.B. consists of four layers. (Soldering, Ground, Power Supply and Component.) As the Signal Pattern which connected in the layers of Ground and Power Supply are omitted here, please refer to the Circuit Diagram.

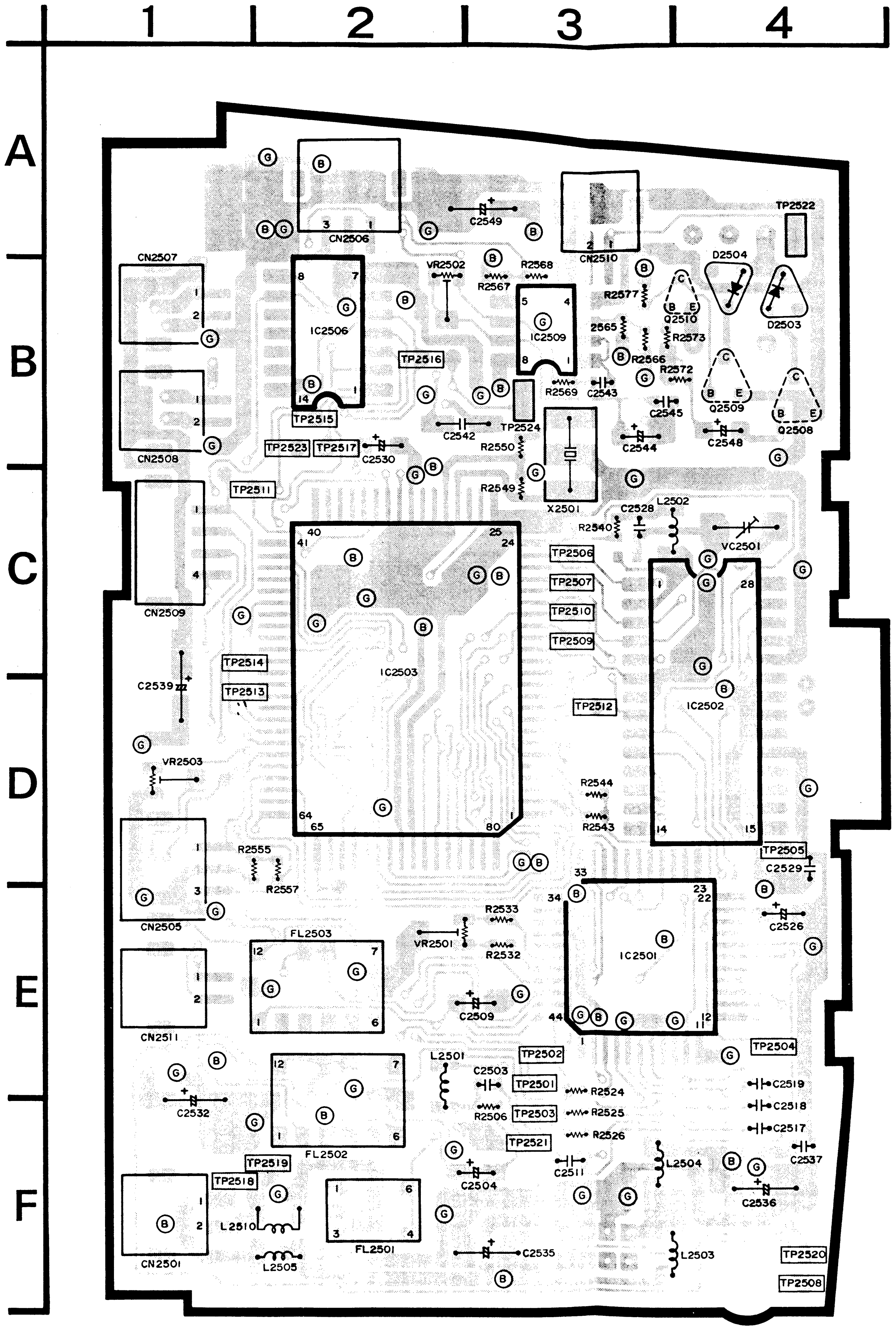
※ Through-hole marks on each P.C.B. denote :

○ : Soldering side ⟷ Component side

Ⓖ : Soldering side (Component side) ⟷ Ground

Ⓑ : Soldering side (Component side) ⟷ Power Supply

D2503	B－4
D2504	B－4
IC2501	E－3
IC2502	D－4
IC2503	D－2
IC2506	B－2
IC2509	B－3
Q2508	B－4
Q2509	B－4
Q2510	B－4
VC2501	C－4
VR2501	E－2
VR2502	B－2
VR2503	D－1


1
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3
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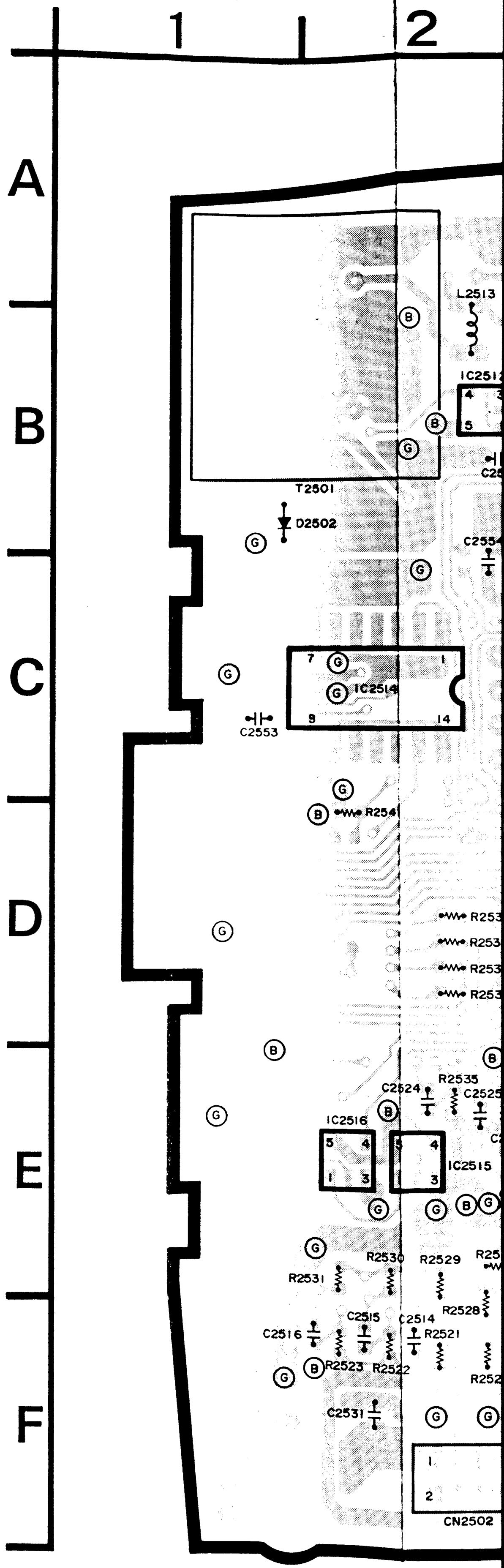
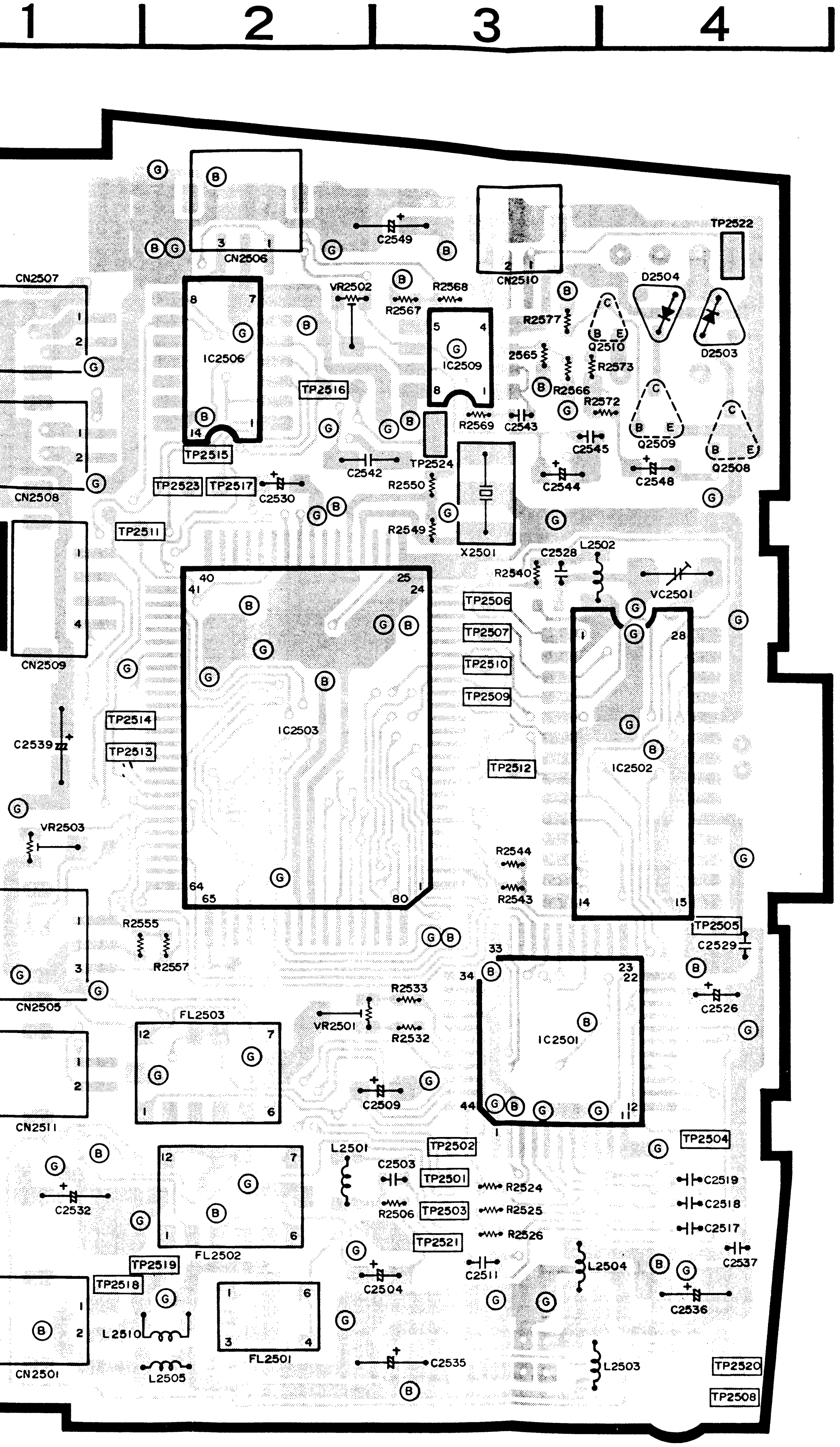
A
B
C
D
E
F
CN2506
CN2507
CN2508
CN2509
CN2510
CN2505
CN2511
CN2501
IC2506
IC2509
IC2503
IC2502
IC2501
VR2502
VR2503
VR2501
VC2501
X2501
D2504
D2503
Q2510
Q2509
Q2508
L2502
L2501
L2504
L2503
L2505
L2510
FL2503
FL2502
FL2501
TP2522
TP2516
TP2515
TP2523
TP2517
TP2524
TP2511
TP2506
TP2507
TP2510
TP2509
TP2514
TP2513
TP2512
TP2505
TP2504
TP2502
TP2501
TP2503
TP2521
TP2519
TP2518
TP2520
TP2508
C2549
C2530
C2542
C2543
C2545
C2544
C2548
C2528
C2539
C2529
C2526
C2509
C2532
C2503
C2511
C2504
C2519
C2518
C2517
C2537
C2536
C2535
R2568
R2567
R2577
R2565
R2573
R2566
R2572
R2569
R2550
R2549
R2540
R2544
R2543
R2555
R2557
R2533
R2532
R2524
R2525
R2506
R2526

AUTO FOCUS P.C.B. (SOLDERING

D2501	C－3
D2502	B－1
D2505	C－4
D2506	C－4
IC2504	F－4
IC2505	C－3
IC2507	A－3
IC2508	B－3
IC2510	B－3
IC2511	B－3
IC2512	B－2
IC2513	B－3
IC2514	C－2
IC2515	E－2
IC2516	E－2
IC2517	C－3
Q2501	F－3
Q2502	E－4
Q2503	F－4
Q2504	B－4
Q2505	B－4
Q2506	A－4
Q2507	B－3

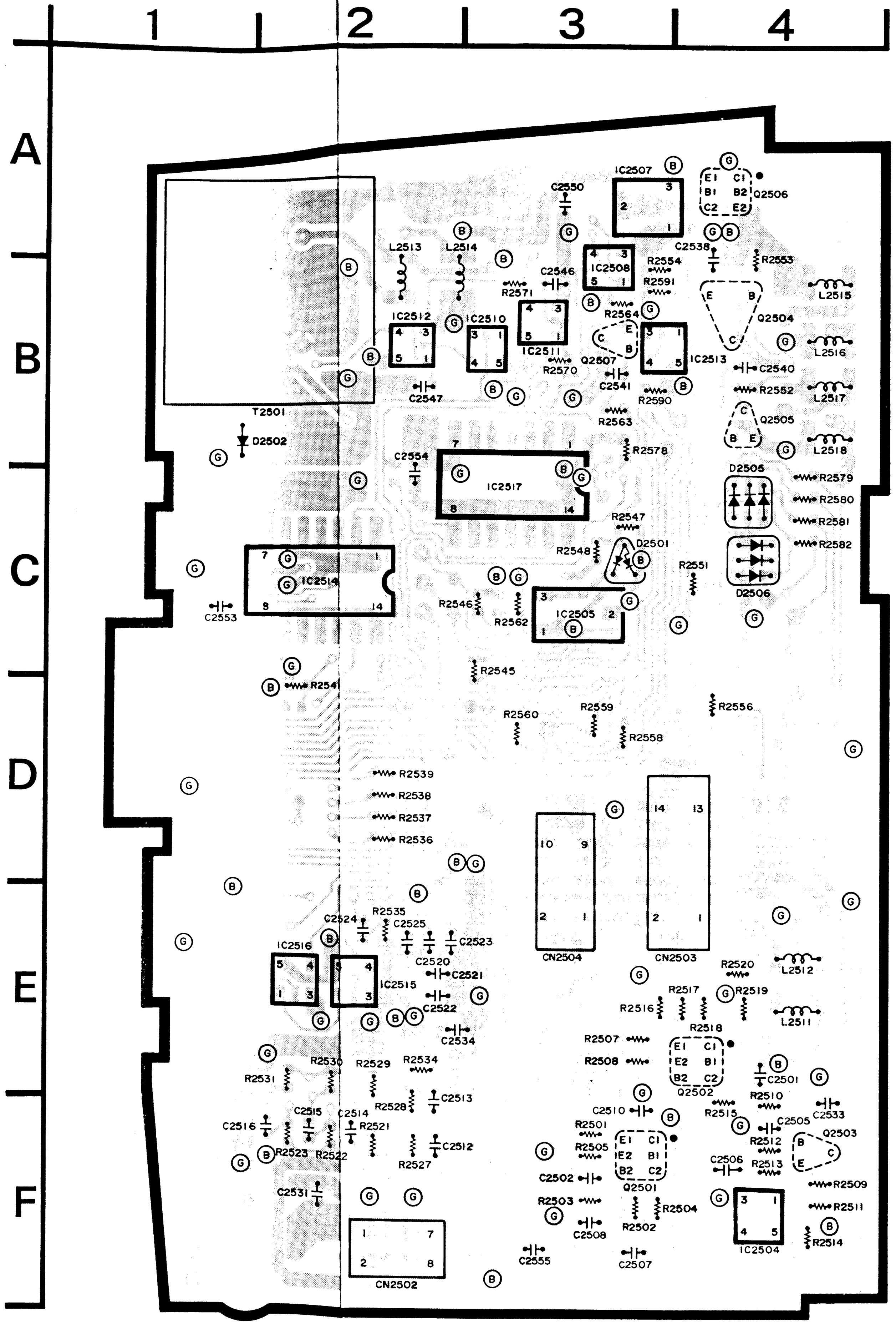

1
2
A
B
C
D
E
F
L2513
T2501
D2502
IC2514
C2553
IC2516
IC2515
R2535
R2530
R2529
R2531
R2528
R2523
R2522
R2521
C2516
C2515
C2514
C2531
CN2502

IT SIDE)


1
2
3
4
CN2506
CN2507
CN2508
CN2509
CN2505
CN2511
CN2501
CN2510
IC2506
IC2509
IC2503
IC2502
IC2501
VR2502
VR2503
VR2501
R2568
R2567
R2569
R2577
R2573
R2566
R2572
2565
R2550
R2549
R2540
R2544
R2543
R2555
R2557
R2533
R2532
R2524
R2525
R2526
R2506
C2549
C2543
C2545
C2542
C2530
C2544
C2548
C2528
C2539
C2529
C2526
C2509
C2503
C2511
C2504
C2532
C2535
C2536
C2537
C2519
C2518
C2517
D2504
D2503
Q2510
Q2509
Q2508
X2501
L2502
L2501
L2504
L2503
L2505
L2510
VC2501
FL2503
FL2502
FL2501
TP2522
TP2516
TP2515
TP2524
TP2523
TP2517
TP2511
TP2506
TP2507
TP2510
TP2509
TP2512
TP2514
TP2513
TP2505
TP2504
TP2502
TP2501
TP2503
TP2521
TP2519
TP2518
TP2520
TP2508

AUTO FOCUS P.C.B. (SOLDERING SIDE)

D2501	C-3
D2502	B-1
D2505	C-4
D2506	C-4
IC2504	F-4
IC2505	C-3
IC2507	A-3
IC2508	B-3
IC2510	B-3
IC2511	B-3
IC2512	B-2
IC2513	B-3
IC2514	C-2
IC2515	E-2
IC2516	E-2
IC2517	C-3
Q2501	F-3
Q2502	E-4
Q2503	F-4
Q2504	B-4
Q2505	B-4
Q2506	A-4
Q2507	B-3


1
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A
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C
D
E
F
T2501
D2502
D2501
D2505
D2506
IC2507
IC2508
IC2510
IC2511
IC2512
IC2513
IC2514
IC2515
IC2516
IC2517
IC2505
IC2504
Q2501
Q2502
Q2503
Q2504
Q2505
Q2506
Q2507
CN2504
CN2503
CN2502
L2513
L2514
L2515
L2516
L2517
L2518
L2512
L2511
C2550
C2546
C2538
C2547
C2541
C2540
C2554
C2553
C2524
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C2520
C2521
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C2512
C2516
C2515
C2514
C2531
C2510
C2501
C2505
C2533
C2506
C2502
C2508
C2555
C2507
R2571
R2554
R2591
R2553
R2564
R2570
R2590
R2552
R2563
R2578
R2579
R2580
R2581
R2582
R2547
R2548
R2551
R2546
R2562
R2545
R2541
R2560
R2559
R2558
R2556
R2539
R2538
R2537
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R2516
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R2508
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R2523
R2522
R2527
R2501
R2505
R2510
R2515
R2512
R2513
R2503
R2502
R2504
R2509
R2511
R2514

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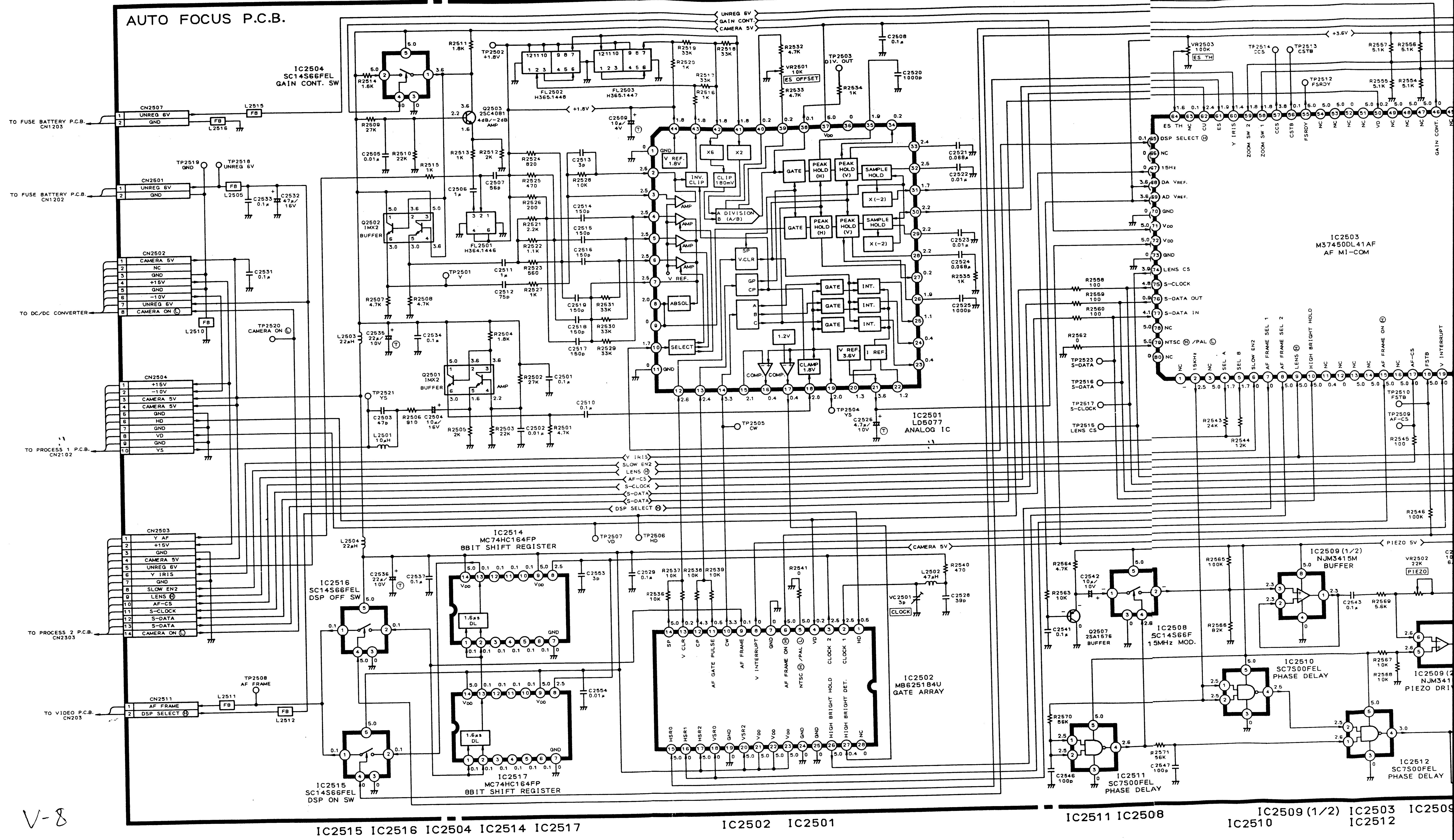
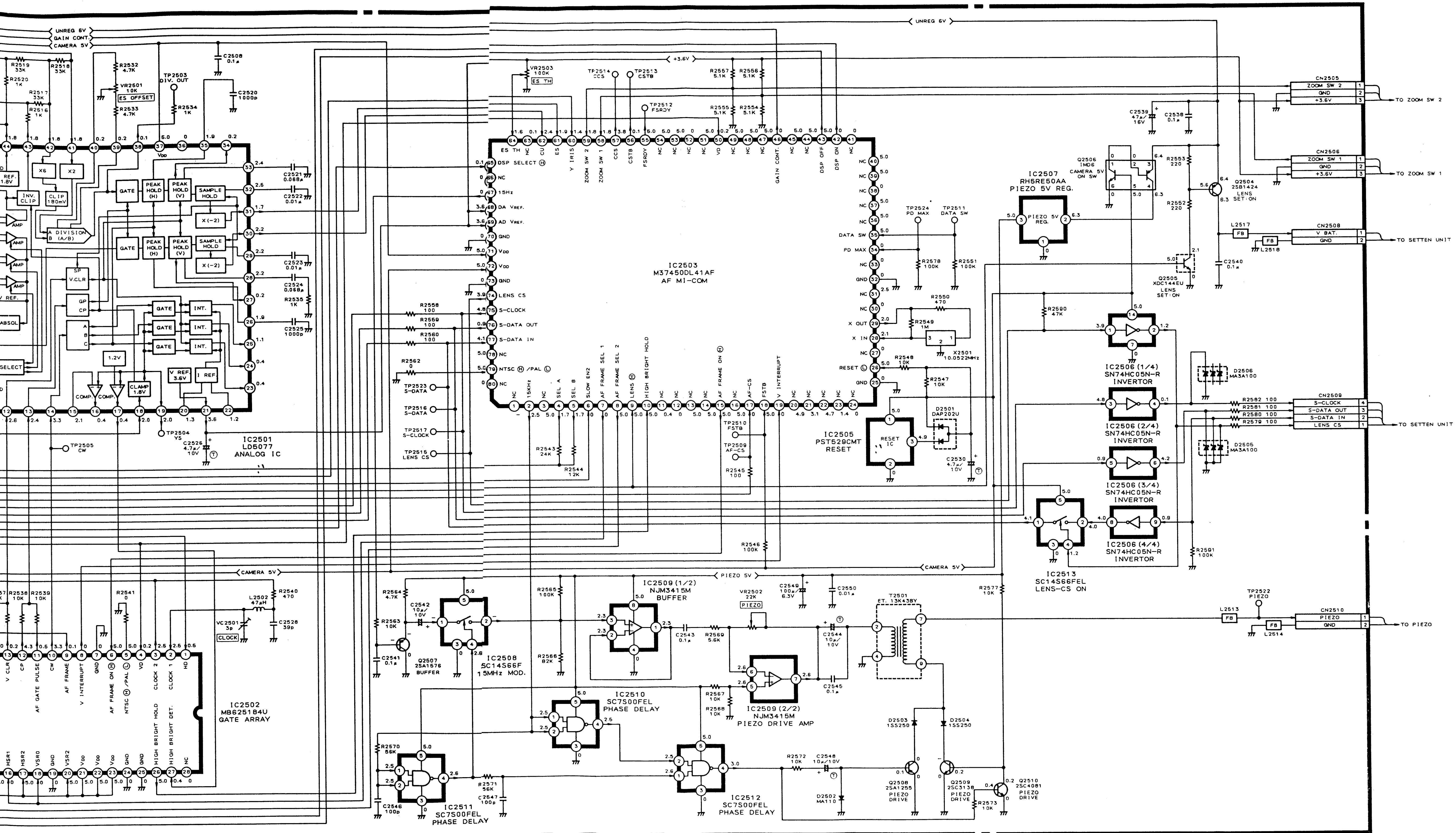
AUTO FOCUS P.C.B.


AUTO FOCUS P.C.B.
IC2504 SC14S66FEL GAIN CONT. SW
TO FUSE BATTERY P.C.B. CN1203
TO FUSE BATTERY P.C.B. CN1202
TO DC/DC CONVERTER
TO PROCESS 1 P.C.B. CN2102
TO PROCESS 2 P.C.B. CN2303
TO VIDEO P.C.B. CN203
CN2507
CN2501
CN2502
CN2504
CN2503
CN2511
UNREG 6V
GND
CAMERA 5V
NC
+15V
-10V
CAMERA ON Ⓛ
HD
VD
YS
Y AF
Y IRIS
SLOW EN2
LENS Ⓗ
AF-CS
S-CLOCK
S-DATA
AF FRAME
DSP SELECT Ⓗ
GAIN CONT.
Q2503 2SC4081 4dB/-2dB AMP
Q2502 IMX2 BUFFER
Q2501 IMX2 BUFFER
FL2501 H364.1446
FL2502 H365.1448
FL2503 H365.1447
TP2502 +1.8V
TP2519 GND
TP2518 UNREG 6V
TP2520 CAMERA ON Ⓛ
TP2501 Y
TP2521 YS
TP2503 DIV. OUT
TP2504 YS
TP2505 CW
TP2507 VD
TP2506 HD
TP2508 AF FRAME
VR2601 10K ES OFFSET
V REF. 1.8V
INV CLIP
CLIP 180mV
X6
X2
A DIVISION B (A/B)
AMP
V REF.
ABSOL
SELECT
SP V.CLR
GP CP
GATE
PEAK HOLD (H)
PEAK HOLD (V)
SAMPLE HOLD
X(-2)
INT.
1.2V
COMP.
CLAMP 1.8V
V REF 3.6V
I REF
IC2501 LD5077 ANALOG IC
IC2514 MC74HC164FP 8BIT SHIFT REGISTER
IC2517 MC74HC164FP 8BIT SHIFT REGISTER
1.6µs DL
IC2516 SC14S66FEL DSP OFF SW
IC2515 SC14S66FEL DSP ON SW
IC2502 MB625184U GATE ARRAY
SP
V CLR
CP
AF GATE PULSE
CW
AF FRAME
V INTERRUPT
AF FRAME ON Ⓗ
NTSC Ⓗ /PAL Ⓛ
CLOCK 2
CLOCK 1
HIGH BRIGHT HOLD
HIGH BRIGHT DET.
HSR0
HSR1
HSR2
VSR0
VSR2
VC2501 3p CLOCK
IC2503 M37450DL41AF AF MI-COM
VR2503 100K ES TH
TP2514 CCS
TP2513 CSTB
TP2512 FSRDY
ES TH
CCS
CSTB
FSRDY
ZOOM SW 1
ZOOM SW 2
DSP SELECT Ⓗ
15Hz
DA VREF.
AD VREF.
LENS CS
S-DATA OUT
S-DATA IN
NTSC Ⓗ /PAL Ⓛ
SEL A
SEL B
AF FRAME SEL 1
AF FRAME SEL 2
HIGH BRIGHT HOLD
AF FRAME ON Ⓗ
FSTB
V INTERRUPT
TP2523 S-DATA
TP2516 S-DATA
TP2517 S-CLOCK
TP2515 LENS CS
TP2510 FSTB
TP2509 AF-CS
+3.6V
PIEZO 5V
Q2507 2SA1576 BUFFER
IC2508 SC14S66F 15MHz MOD.
IC2509 (1/2) NJM3415M BUFFER
VR2502 22K PIEZO
IC2509 (2 NJM341 PIEZO DRI
IC2510 SC7S00FEL PHASE DELAY
IC2511 SC7S00FEL PHASE DELAY
IC2512 SC7S00FEL PHASE DELAY
IC2515 IC2516 IC2504 IC2514 IC2517
IC2502 IC2501
IC2511 IC2508
IC2510
IC2509 (1/2) IC2503 IC2512
IC250

V-8

01 Nov. 1993


UNREG 6V
GAIN CONT.
CAMERA 5V
+3.6V
PIEZO 5V
IC2501
LD5077
ANALOG IC
IC2502
MB625184U
GATE ARRAY
IC2503
M37450DL41AF
AF MI-COM
IC2505
PST529CMT
RESET
IC2506 (1/4)
SN74HC05N-R
INVERTOR
IC2506 (2/4)
SN74HC05N-R
INVERTOR
IC2506 (3/4)
SN74HC05N-R
INVERTOR
IC2506 (4/4)
SN74HC05N-R
INVERTOR
IC2507
RH5RE50AA
PIEZO 5V REG.
IC2508
SC14S66F
15MHz MOD.
IC2509 (1/2)
NJM3415M
BUFFER
IC2509 (2/2)
NJM3415M
PIEZO DRIVE AMP
IC2510
SC7S00FEL
PHASE DELAY
IC2511
SC7S00FEL
PHASE DELAY
IC2512
SC7S00FEL
PHASE DELAY
IC2513
SC14S66FEL
LENS-CS ON
Q2504
2SB1424
LENS SET ON
Q2505
XDC144EU
LENS SET ON
Q2506
IMD6
CAMERA 5V ON SW
Q2507
2SA1576
BUFFER
Q2508
2SA1255
PIEZO DRIVE
Q2509
2SC3138
PIEZO DRIVE
Q2510
2SC4081
PIEZO DRIVE
T2501
ET. 13K438Y
X2501
10.0522MHz
D2501
DAP202U
D2502
MA110
D2503
1SS250
D2504
1SS250
D2505
MA3A100
D2506
MA3A100
VR2501
10K
ES OFFSET
VR2502
22K
PIEZO
VR2503
100K
ES TH
VC2501
3p
CLOCK
L2502
47μH
TP2503
DIV. OUT
TP2504
YS
TP2505
CW
TP2509
AF-CS
TP2510
FSTB
TP2511
DATA SW
TP2512
FSRDY
TP2513
CSTB
TP2514
CCS
TP2515
LENS CS
TP2516
S-DATA
TP2517
S-CLOCK
TP2522
PIEZO
TP2523
S-DATA
TP2524
PD MAX
CN2505
ZOOM SW 2
GND
+3.6V
TO ZOOM SW 2
CN2506
ZOOM SW 1
GND
+3.6V
TO ZOOM SW 1
CN2508
V BAT.
GND
TO SETTEN UNIT
CN2509
S-CLOCK
S-DATA OUT
S-DATA IN
LENS CS
TO SETTEN UNIT
CN2510
PIEZO
GND
TO PIEZO
DSP SELECT Ⓗ
15Hz
DA VREF.
AD VREF.
LENS CS
S-CLOCK
S-DATA OUT
S-DATA IN
NTSC Ⓗ / PAL Ⓛ
DATA SW
PD MAX
X OUT
X IN
RESET Ⓛ
ES TH
Y IRIS
ZOOM SW 2
ZOOM SW 1
CCS
CSTB
FSRDY
GAIN CONT.
DSP OFF
DSP ON
SLOW EN2
AF FRAME SEL 1
AF FRAME SEL 2
LENS Ⓗ
HIGH BRIGHT HOLD
AF FRAME ON Ⓗ
AF-CS
FSTB
V INTERRUPT
PEAK HOLD (H)
PEAK HOLD (V)
SAMPLE HOLD
GATE
INT.
X(-2)
CLAMP 1.8V
V REF. 3.6V
I REF
A DIVISION B (A/B)
CLIP 180mV
INV. CLIP
V.CLR
V CLR
CP
AF GATE PULSE
CW
AF FRAME
V INTERRUPT
AF FRAME ON Ⓗ
NTSC Ⓗ /PAL Ⓛ
CLOCK 2
CLOCK 1
HD
HIGH BRIGHT HOLD
HIGH BRIGHT DET.

IC2502 IC2501

IC2511 IC2508

IC2509 (1/2) IC2503 IC2509 (2/2)

IC2510 IC2512

IC2505

IC2507 IC2513 IC2506 (1/4~4/4)

PROCESS 1 P.C.B. (REF. NO.2XXX~)

< NOTICE >

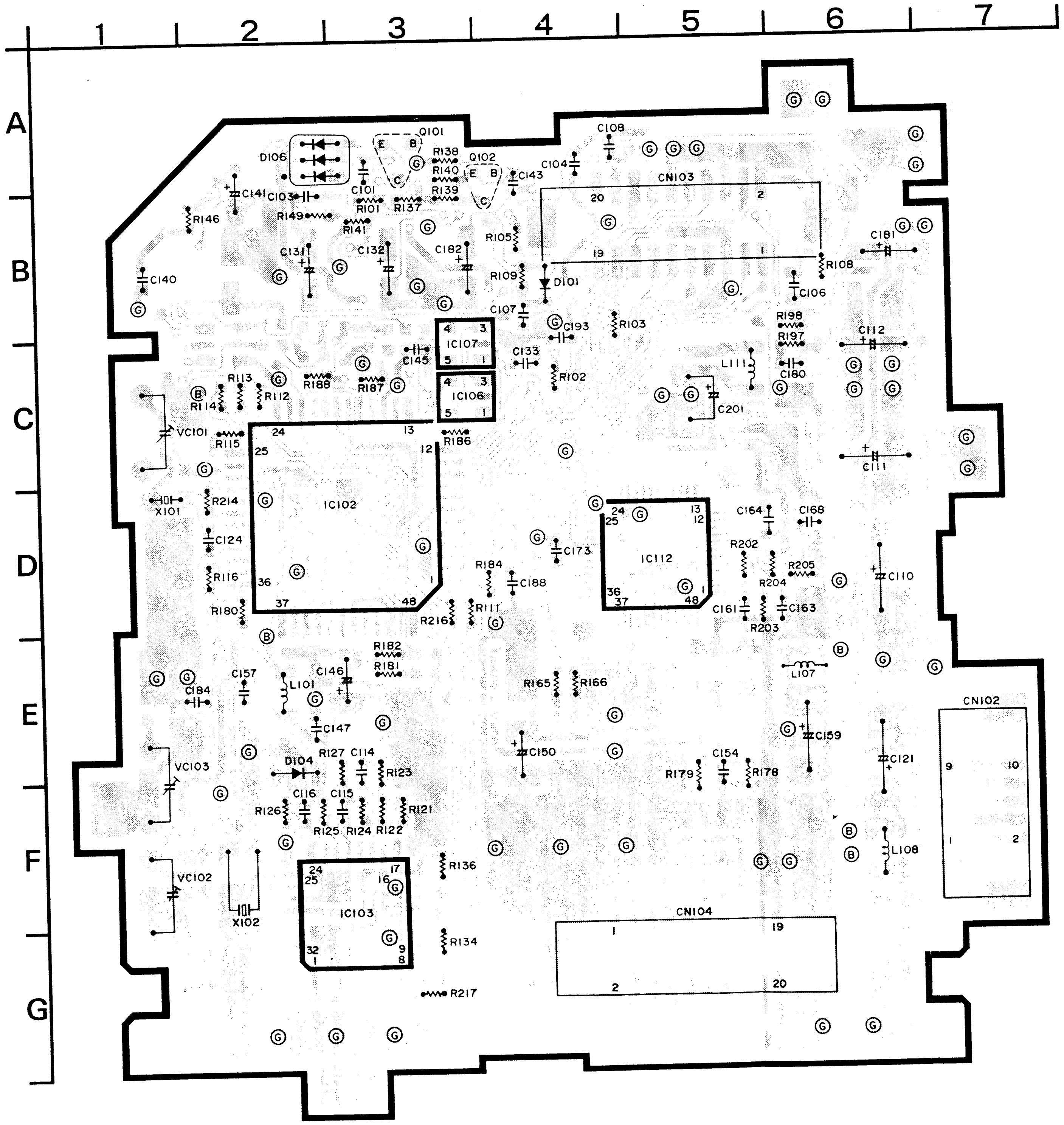
The PROCESS 1 P.C.B. consists of four layers.
(Soldering, Ground, Power Supply and Component.)
As the Signal Pattern which connected in the layers of Ground and Power Supply are omitted here, please refer to the Circuit Diagram.

※ Through-hole marks on each P.C.B. denote :

- ○ : Soldering side ←→ Component side
- Ⓖ : Soldering side (Component side) ←→ Ground
- Ⓑ : Soldering side (Component side) ←→ Power Supply

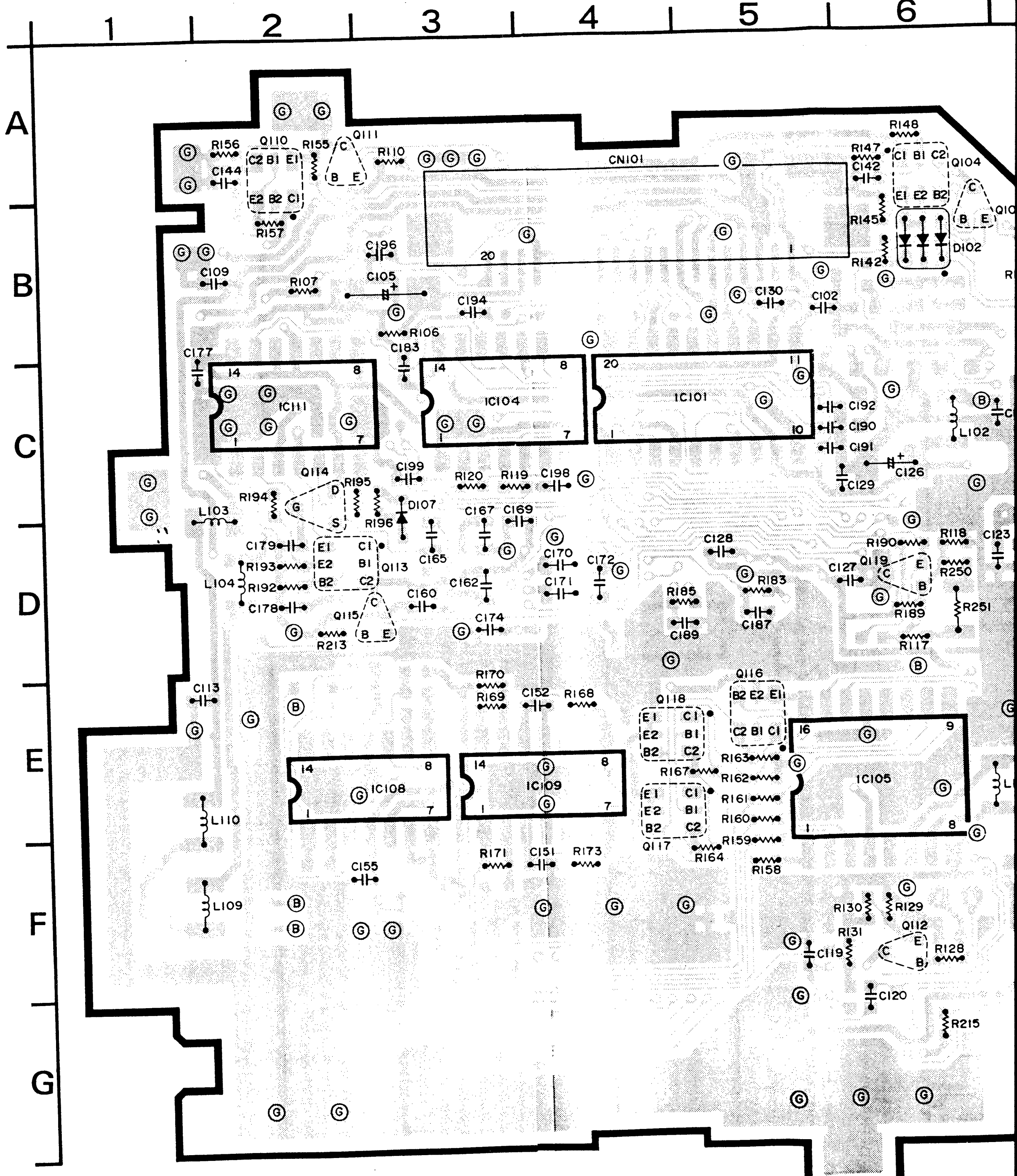
(COMPONENT SIDE)

D101	B-4
D104	F-2
D106	A-2
IC102	D-3
IC103	F-3
IC106	C-3
IC107	C-3
IC112	D-5
Q101	A-3
Q102	A-4
VC101	C-1
VC102	F-1
VC103	F-1


1
2
3
4
5
6
7
A
B
C
D
E
F
G
D106
Q101
Q102
R138
R140
R139
C143
C104
C108
CN103
C141
C103
C101
R101
R137
R149
R141
R146
C131
C132
C182
R105
R109
D101
R108
C181
C140
C107
C193
R103
C106
R198
R197
C112
IC107
C145
C133
R102
IC106
L111
C180
R113
R112
R188
R187
R114
C201
R186
VC101
R115
C111
IC102
R214
X101
C124
R116
R180
IC112
C164
C168
C173
R184
C188
R202
R205
R204
C110
R111
R216
C161
R203
C163
R182
R181
L107
C157
L101
C146
C184
C147
R165
R166
CN102
VC103
D104
R127
C114
R123
C150
C159
R179
C154
R178
C121
R126
C116
C115
R121
R125
R124
R122
R136
L108
VC102
X102
IC103
CN104
R134
R217

(SOLDERING SIDE)

D102	B-6
D107	C-3
IC101	C-4
IC104	C-3
IC105	E-6
IC108	E-2
IC109	E-3
IC111	C-2
Q103	B-6
Q104	A-6
Q110	A-2
Q111	A-2
Q112	F-6
Q113	D-2
Q114	C-2
Q115	D-2
Q116	E-5
Q117	E-4
Q118	E-4
Q119	D-6


1
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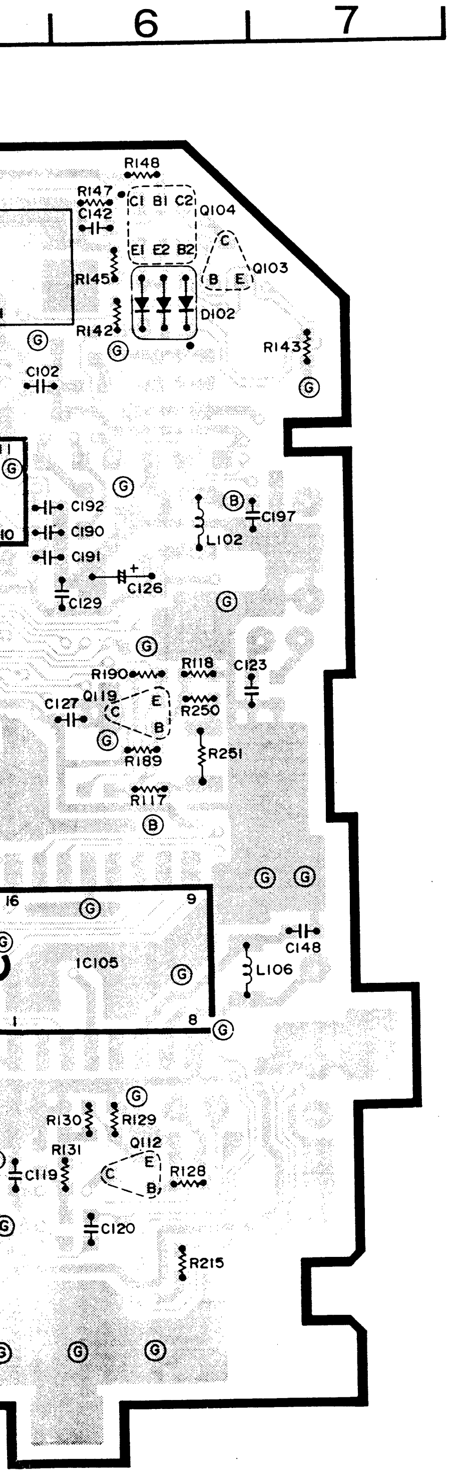
3
4
5
6
A
B
C
D
E
F
G
R156
Q110
R155
Q111
R110
CN101
R148
C144
R157
R147
C142
Q104
R145
R142
D102
C109
R107
C196
C105
C194
C130
C102
R106
C183
C177
IC111
IC104
IC101
C192
C190
C191
L102
C129
C126
Q114
R194
R195
C199
R120
R119
C198
L103
D107
R196
C167
C169
C179
Q113
C165
C170
C128
R190
R118
C123
R193
C172
C171
R183
C127
Q119
R250
L104
R192
C162
R185
C160
C189
C187
R189
R251
C178
Q115
C174
R117
R213
C113
R170
R169
C152
R168
Q118
Q116
IC108
IC109
IC105
R167
R162
R161
R160
R159
Q117
L110
R171
C151
R173
R164
R158
C155
L109
R130
R129
R131
Q112
C119
R128
C120
R215


6
7
R148
R147
C142
C1 B1 C2
Q104
C
Q103
E1 E2 B2
B E
R145
D102
R142
R143
C102
C192
C190
C191
L102
C197
C126
C129
R190
R118
C123
C127
Q119
R250
R251
R189
R117
IC105
L106
C148
R130
R129
R131
Q112
R128
C119
C120
R215

PROCESS 2 P.C.B. (REF. NO.2XXX~)

< NOTICE >

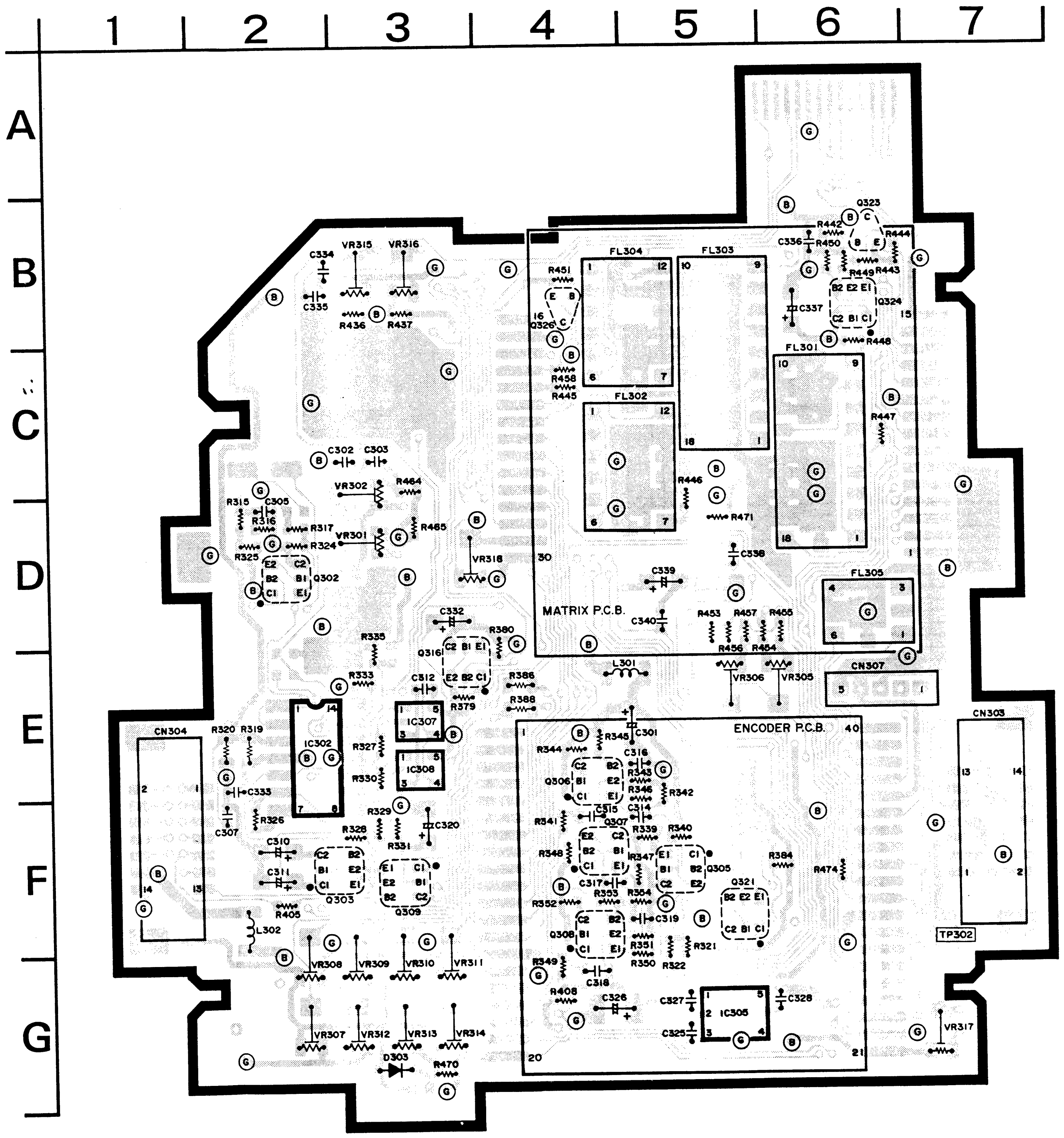
The PROCESS 2 P.C.B. consists of four layers. (Soldering, Ground, Power Supply and Component.) As the Signal Pattern which connected in the layers of Ground and Power Supply are omitted here, please refer to the Circuit Diagram.

※ Through-hole marks on each P.C.B. denote :

○ : Soldering side ⟷ Component side
Ⓖ : Soldering side (Component side) ⟷ Ground
Ⓑ : Soldering side (Component side) ⟷ Power Supply

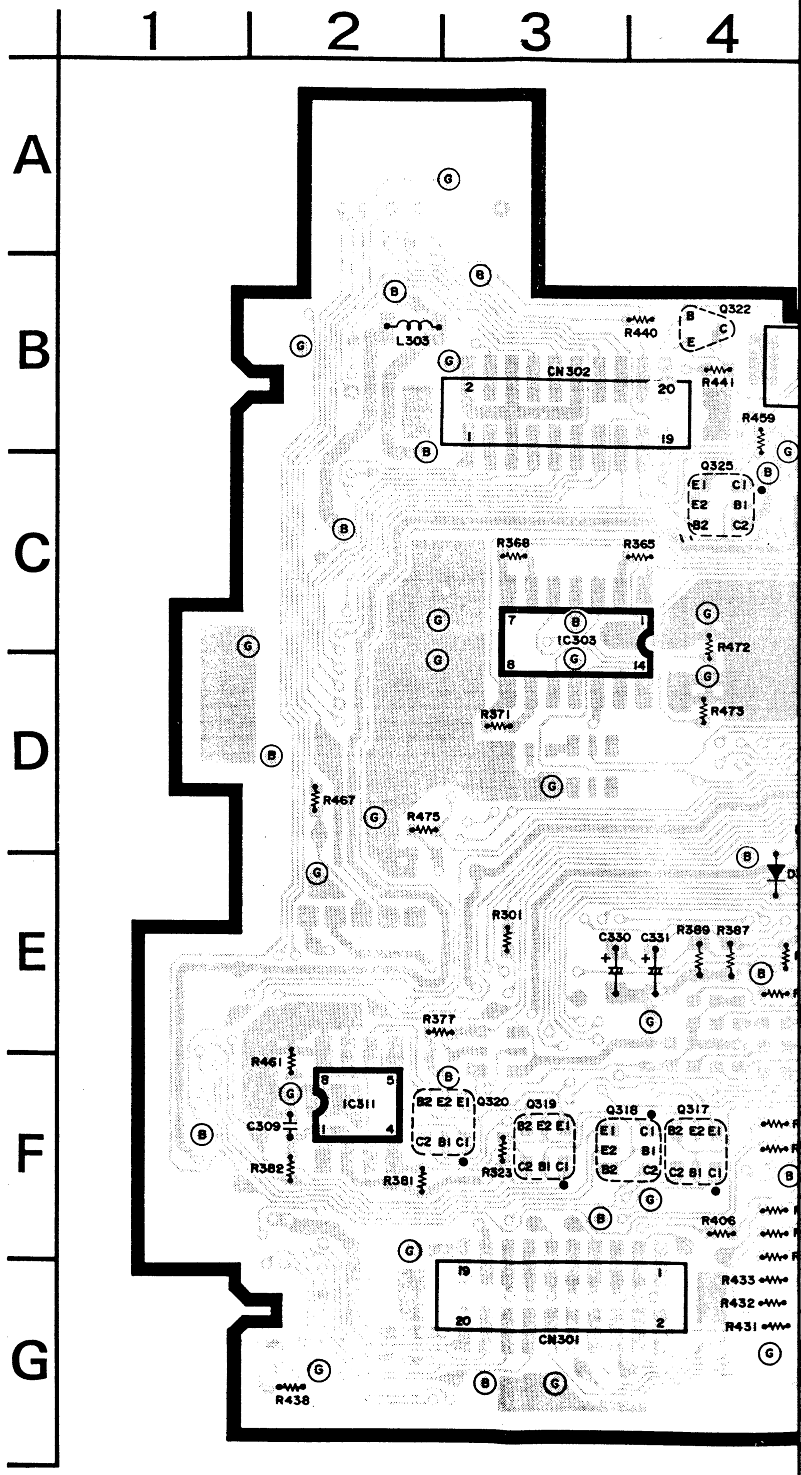
(COMPONENT SIDE)

D303	G-3
IC302	E-2
IC305	G-5
IC307	E-3
IC308	E-3
Q302	D-2
Q303	F-2
Q305	F-5
Q306	E-4
Q307	F-4
Q308	F-4
Q309	F-3
Q316	E-3
Q321	F-5
Q323	B-6
Q324	B-6
Q326	B-4
VR301	D-3
VR302	C-3
VR305	E-6
VR306	E-5
VR307	G-2
VR308	G-2
VR309	G-3
VR310	G-3
VR311	G-3
VR312	G-3
VR313	G-3
VR314	G-3
VR315	B-3
VR316	B-3
VR317	G-7
VR318	D-4


1
2
3
4
5
6
7
A
B
C
D
E
F
G
FL304
FL303
FL302
FL301
FL305
MATRIX P.C.B.
ENCODER P.C.B.
CN304
CN303
CN307
IC302
IC305
IC307
IC308
Q302
Q303
Q305
Q306
Q307
Q308
Q309
Q316
Q321
Q323
Q324
Q326
VR301
VR302
VR305
VR306
VR307
VR308
VR309
VR310
VR311
VR312
VR313
VR314
VR315
VR316
VR317
VR318
D303
L301
L302
TP302

(SOLDERING SIDE)

D301	E-4
IC301	D-5
IC303	C-3
IC304	F-5
IC311	F-2
Q301	D-6
Q317	F-4
Q318	F-3
Q319	F-3
Q320	F-3
Q322	B-4
Q325	C-4

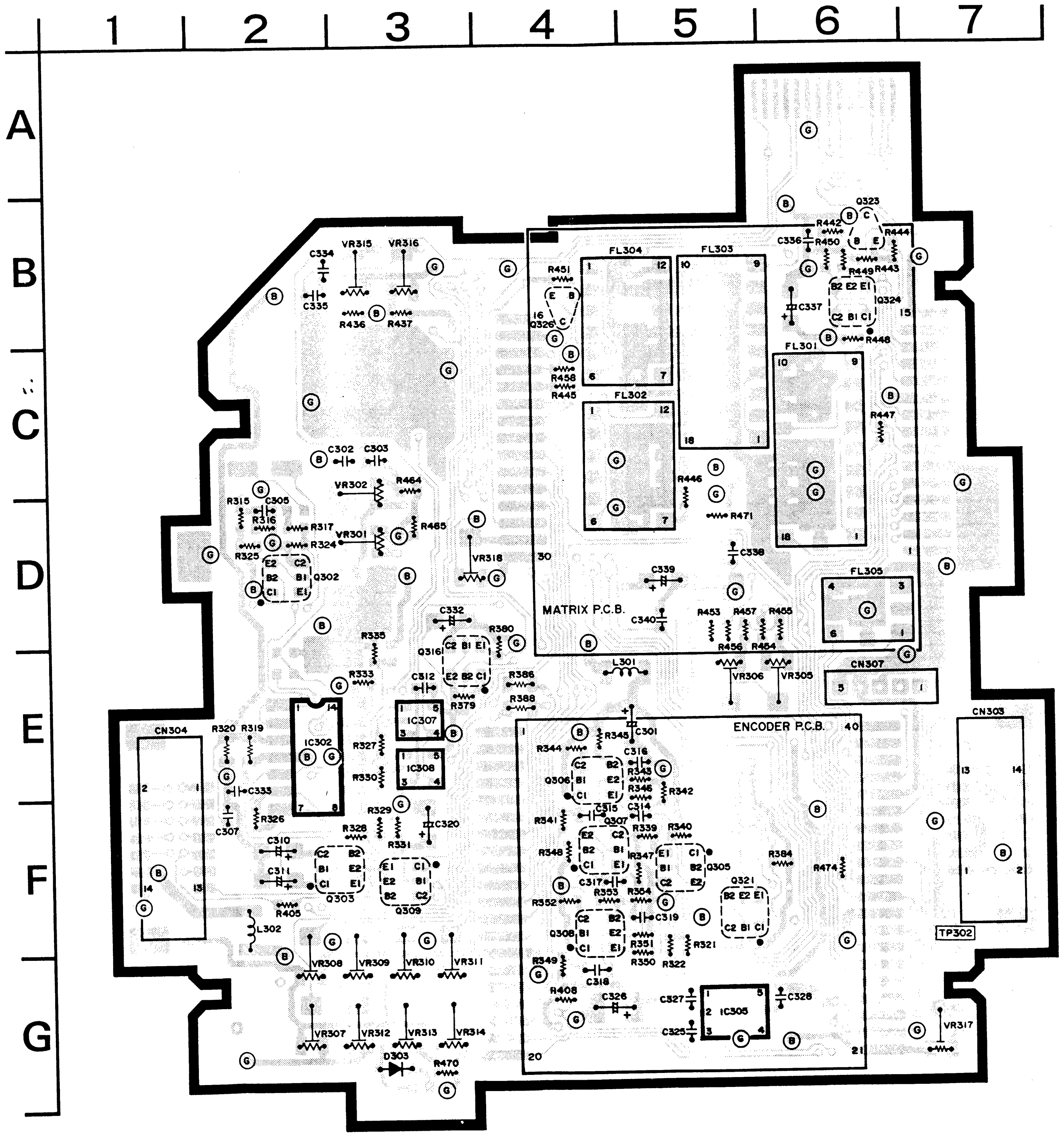

1
2
3
4
A
B
C
D
E
F
G
L303
CN302
CN301
Q322
Q325
IC303
IC311
Q317
Q318
Q319
Q320
R440
R441
R459
R368
R365
R472
R473
R371
R467
R475
R301
C330
C331
R389
R387
R377
R461
C309
R382
R381
R323
R406
R433
R432
R431
R438

SS 2 P.C.B. (REF. NO.2XXX~)

S 2 P.C.B. consists of four layers.
iround, Power Supply and Component.)
l Pattern which connected in the layers
d Power Supply are omitted here, please
Circuit Diagram.
e marks on each P.C.B. denote :
g side ⟷ Component side
g side (Component side) ⟷ Ground
g side (Component side) ⟷ Power Supply

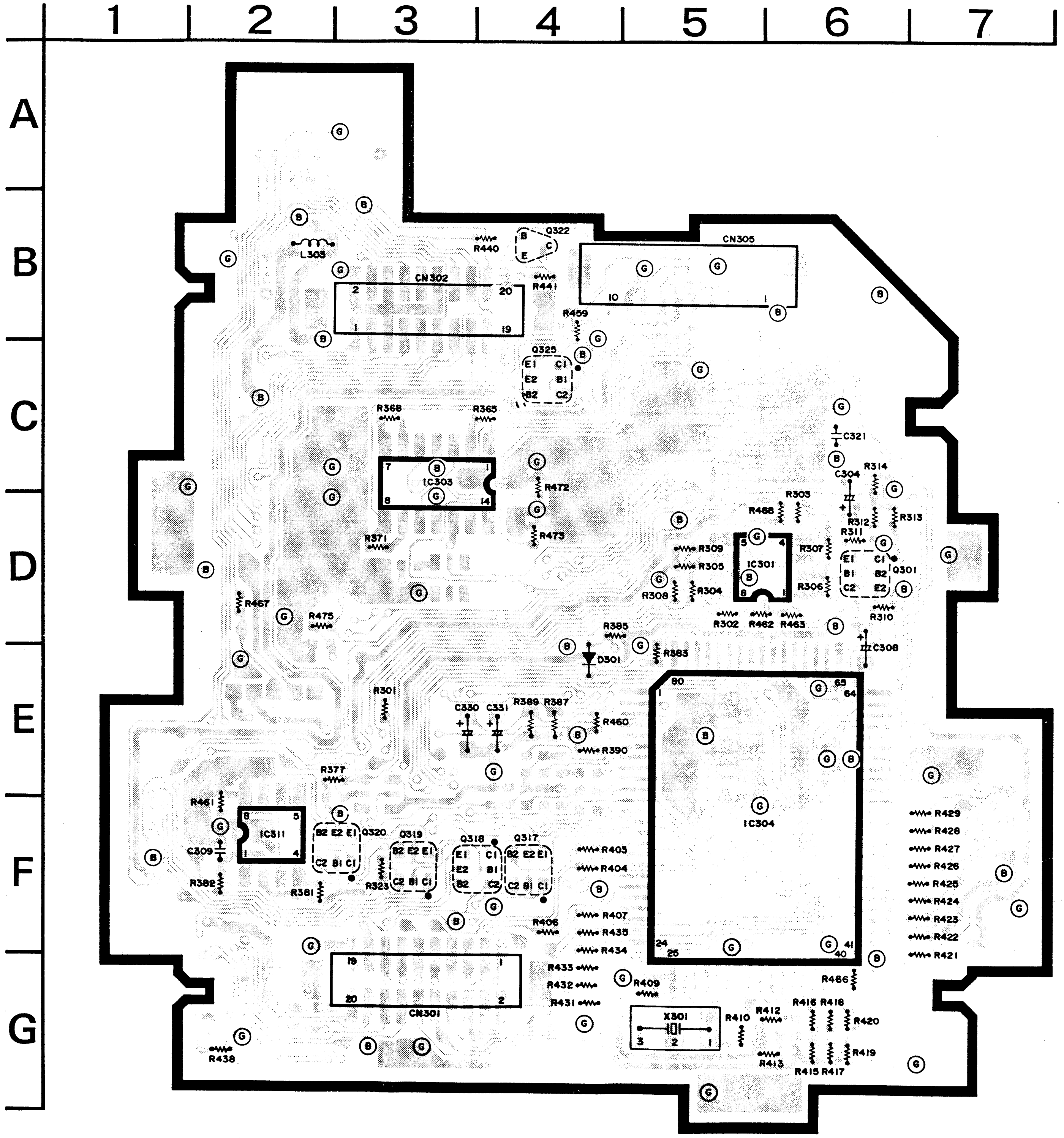
ONENT SIDE)

G－3
E－2
G－5
E－3
E－3
D－2
F－2
F－5
E－4
F－4
F－4
F－3
E－3
F－5
B－6
B－6
B－4
D－3
C－3
E－6
E－5
G－2
G－2
G－3
G－3
G－3
G－3
G－3
G－3
B－3
B－3
G－7
D－4


1
2
3
4
5
6
7
A
B
C
D
E
F
G
MATRIX P.C.B.
ENCODER P.C.B.
FL304
FL303
FL302
FL301
FL305
CN304
CN303
CN307
TP302
IC302
IC305
IC307
IC308
Q302
Q303
Q305
Q306
Q307
Q308
Q309
Q316
Q321
Q323
Q324
Q326
VR301
VR302
VR305
VR306
VR307
VR308
VR309
VR310
VR311
VR312
VR313
VR314
VR315
VR316
VR317
VR318
D303
L301
L302
G
B

(SOLDERING SIDE)

D301	E－4
IC301	D－5
IC303	C－3
IC304	F－5
IC311	F－2
Q301	D－6
Q317	F－4
Q318	F－3
Q319	F－3
Q320	F－3
Q322	B－4
Q325	C－4


1
2
3
4
5
6
7
A
B
C
D
E
F
G
CN301
CN302
CN305
IC301
IC303
IC304
IC311
Q301
Q317
Q318
Q319
Q320
Q322
Q325
D301
L303
X301
G
B

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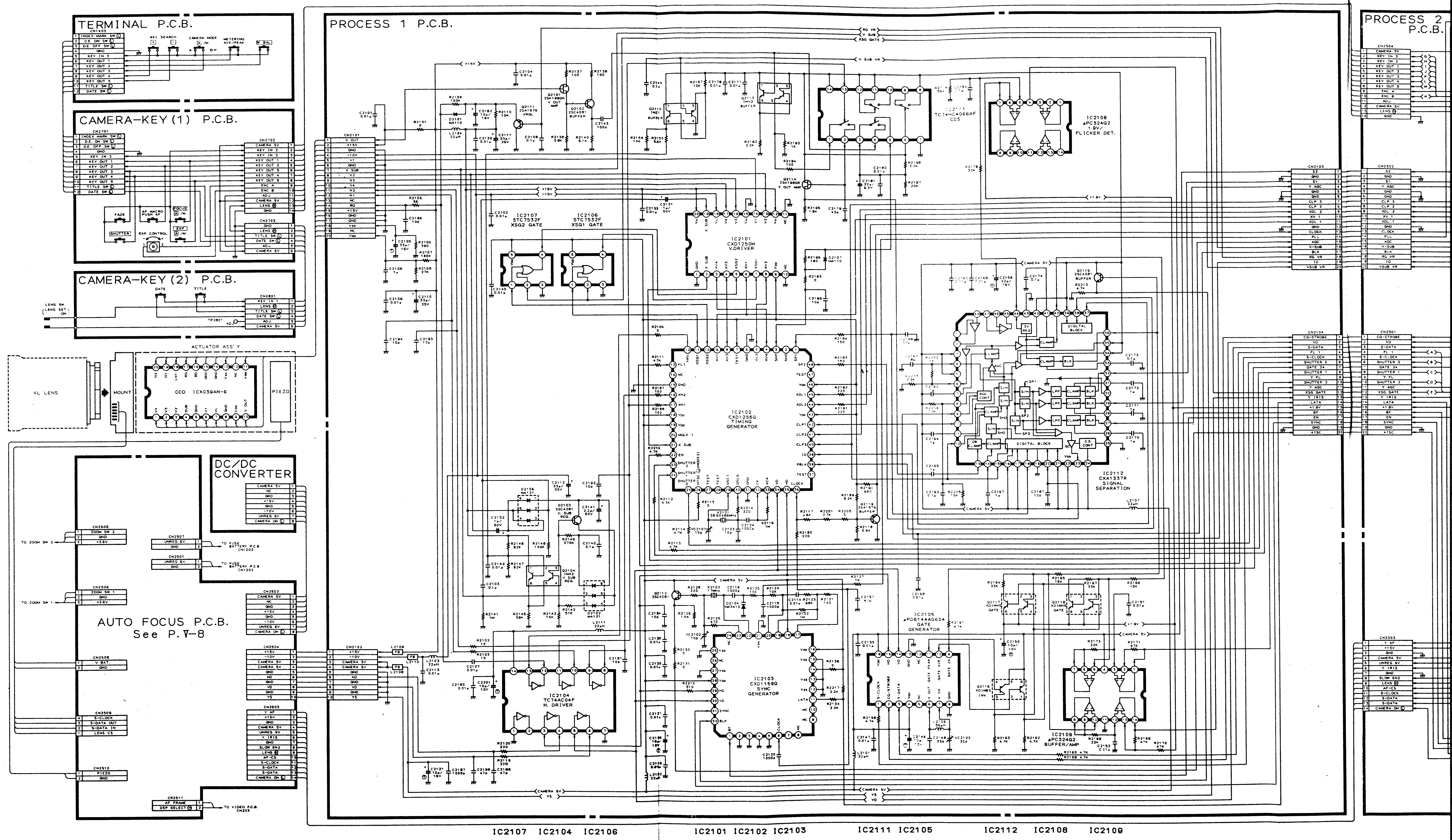
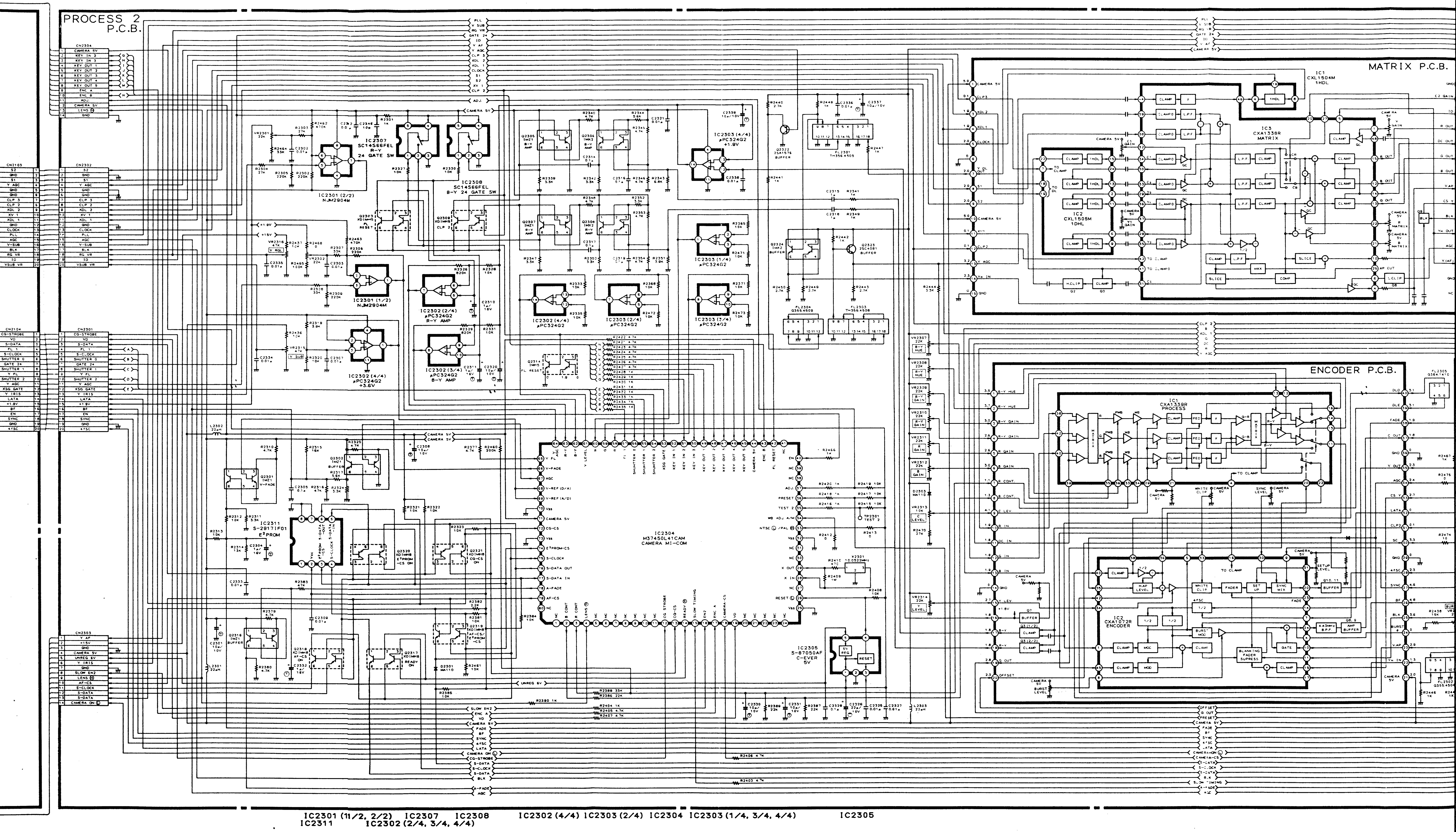
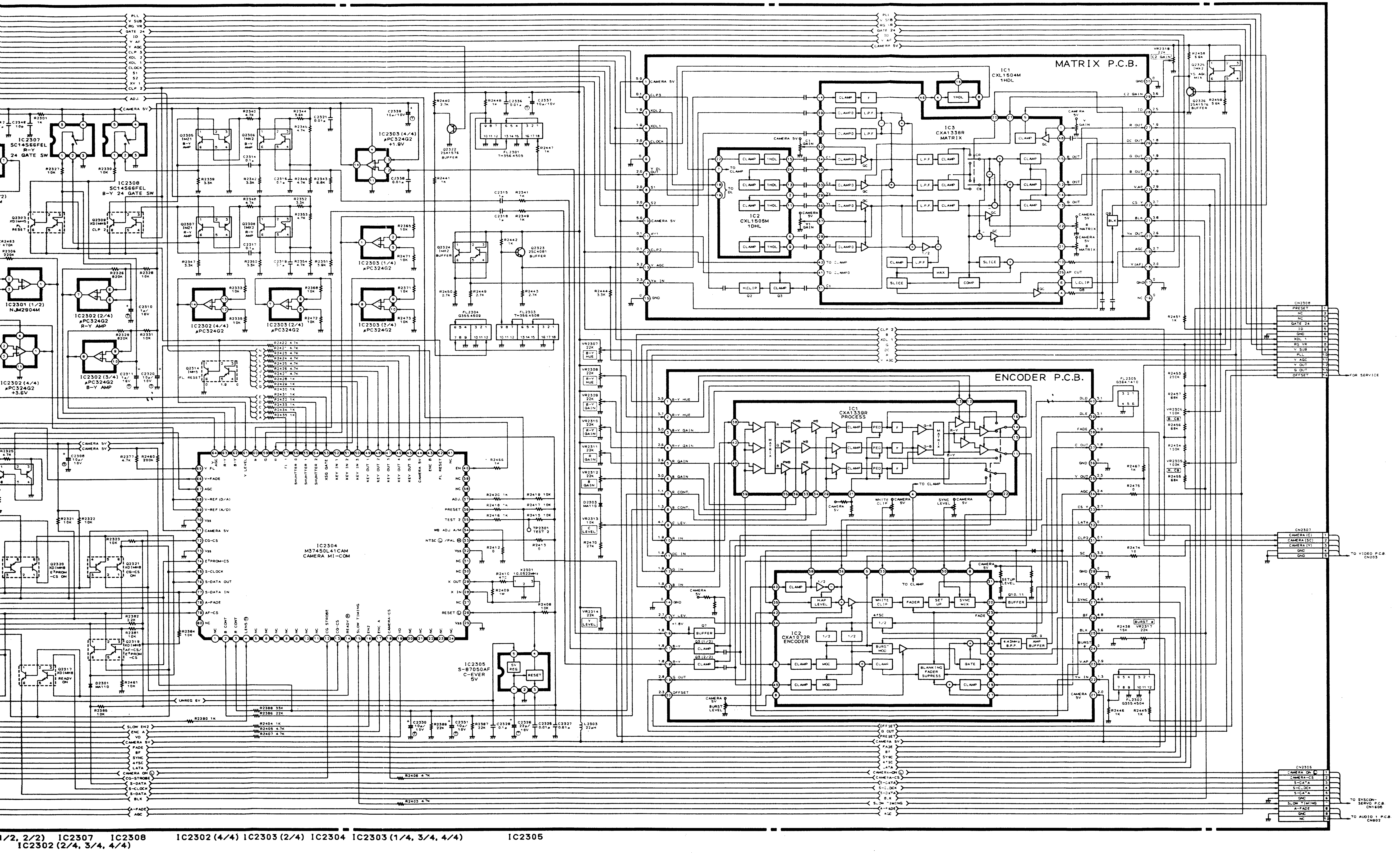
PROCESS 1, 2 P.C.B.


TERMINAL P.C.B.
CAMERA-KEY (1) P.C.B.
CAMERA-KEY (2) P.C.B.
ACTUATOR ASS'Y
VL LENS
MOUNT
CCD ICX039AN-6
PIEZO
DC/DC CONVERTER
AUTO FOCUS P.C.B. See P.V-8
TO ZOOM SW 2
TO ZOOM SW 1
TO FUSE BATTERY P.C.B. CN1203
TO FUSE BATTERY P.C.B. CN1202
TO VIDEO P.C.B. CN205
PROCESS 1 P.C.B.
PROCESS 2 P.C.B.
IC2107 STC7S32F XSG2 GATE
IC2106 STC7S32F XSG1 GATE
IC2101 CXD1250M V.DRIVER
IC2111 TC74HC4066AF CCS
IC2108 μPC324G2 1.8V/ FLICKER DET.
IC2102 CXD1255Q TIMING GENERATOR
IC2112 CXA1337R SIGNAL SEPARATION
IC2104 TC74AC04F H. DRIVER
IC2103 CXD1159Q SYNC GENERATOR
IC2105 μPD6144AG604 GATE GENERATOR
IC2109 μPC324G2 BUFFER/AMP
IC2107 IC2104 IC2106
IC2101 IC2102 IC2103
IC2111 IC2105
IC2112 IC2108 IC2109

01 **Nov. 1993**


PROCESS 2 P.C.B.
CN2304
CN2302
CN2301
CN2303
CN2103
CN2104
IC2301 (2/2) NJM2904M
IC2301 (1/2) NJM2904M
IC2307 SC14566FEL R-Y 24 GATE SW
IC2308 SC14566FEL B-Y 24 GATE SW
IC2302 (2/4) μPC324G2 R-Y AMP
IC2302 (3/4) μPC324G2 B-Y AMP
IC2302 (4/4) μPC324G2 +3.6V
IC2302 (4/4) μPC324G2
IC2303 (4/4) μPC324G2 +1.9V
IC2303 (1/4) μPC324G2
IC2303 (2/4) μPC324G2
IC2303 (3/4) μPC324G2
IC2304 M37450L41CAM CAMERA MI-COM
IC2305 S-87050AF C-EVER 5V
IC2311 S-29171F01 E²PROM
FL2301 TH356 4505
FL2304 G355 4509
FL2305 TH356 4508
MATRIX P.C.B.
IC1 CXL1504M 1HDL
IC2 CXL1505M 1HDL
IC3 CXA1338R MATRIX
ENCODER P.C.B.
IC1 CXA1339R PROCESS
IC2 CXA1072R ENCODER
IC2301 (1/2, 2/2) IC2307 IC2308 IC2302 (4/4) IC2303 (2/4) IC2304 IC2303 (1/4, 3/4, 4/4) IC2305
IC2311 IC2302 (2/4, 3/4, 4/4)


MATRIX P.C.B.
IC1 CXL1504M 1HDL
IC2 CXL1505M 1DHL
IC3 CXA1338R MATRIX
ENCODER P.C.B.
IC1 CXA1339R PROCESS
IC2 CXA1072R ENCODER
IC2304 M37450L41CAM CAMERA MI-COM
IC2305 S-87050AF C-EVER 5V
IC2307 SC14S66FEL R-Y 24 GATE SW
IC2308 SC14S66FEL B-Y 24 GATE SW
IC2301 (1/2) NJM2904M
IC2302 (2/4) μPC324G2 R-Y AMP
IC2302 (3/4) μPC324G2 B-Y AMP
IC2302 (4/4) μPC324G2 +3.6V
IC2303 (4/4) μPC324G2 +1.8V
IC2303 (1/4) μPC324G2
IC2303 (2/4) μPC324G2
IC2303 (3/4) μPC324G2
CN2308
CN2307
CN2305
FOR SERVICE
TO VIDEO P.C.B. CN203
TO SYSCON-SERVO P.C.B. CN1606
TO AUDIO 1 P.C.B. CN802
1/2, 2/2) IC2307 IC2308
IC2302 (2/4, 3/4, 4/4)
IC2302 (4/4) IC2303 (2/4) IC2304 IC2303 (1/4, 3/4, 4/4)
IC2305

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VIDEO P.C.B. (COMPONENT SIDE)

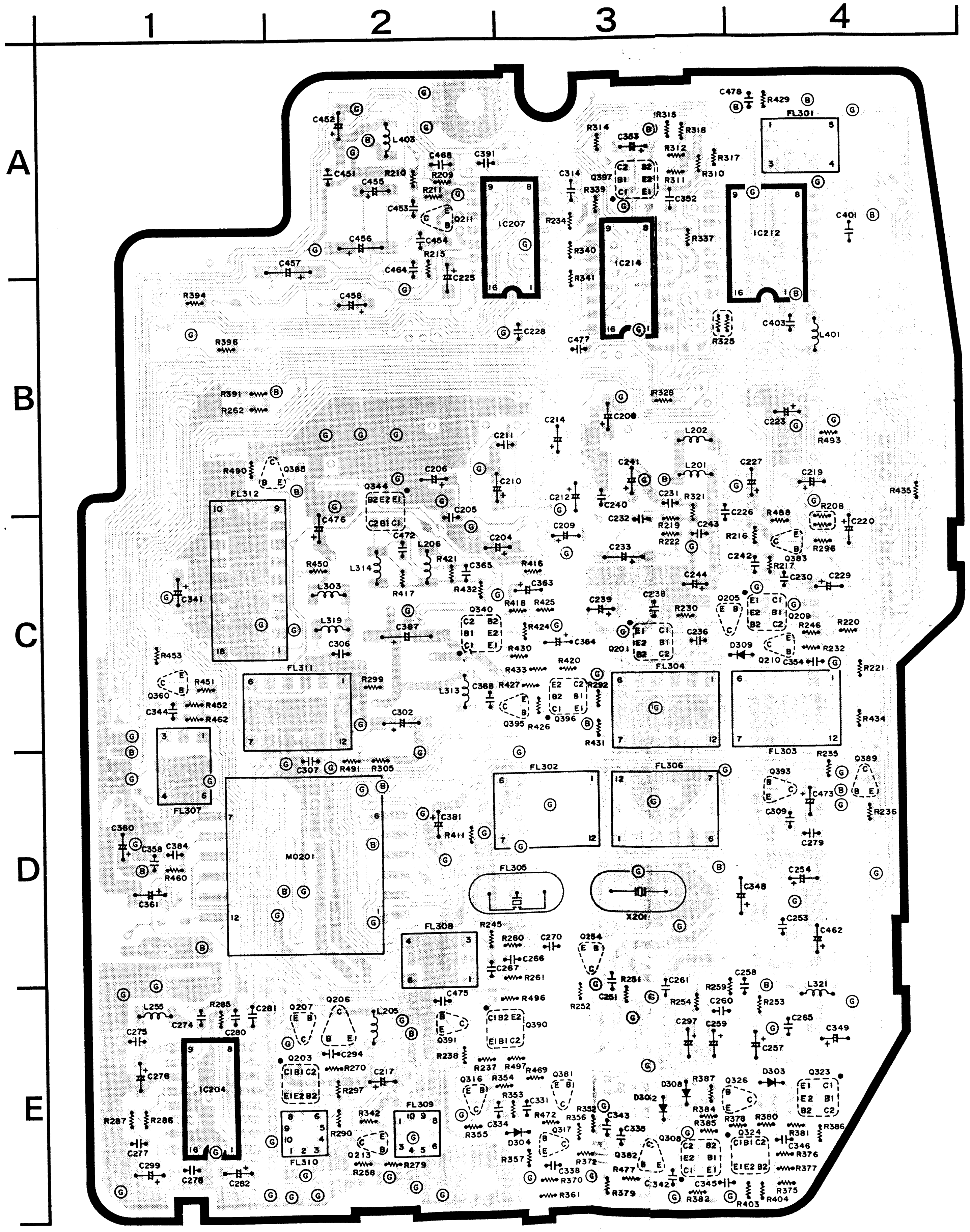
< NOTICE >

The VIDEO P.C.B. consists of four layers.
(Soldering, Ground, Power Supply and Component.)
As the Signal Pattern which connected in the layers of Ground and Power Supply are omitted here, please refer to the Circuit Diagram.

Through-hole marks on each P.C.B. denote :

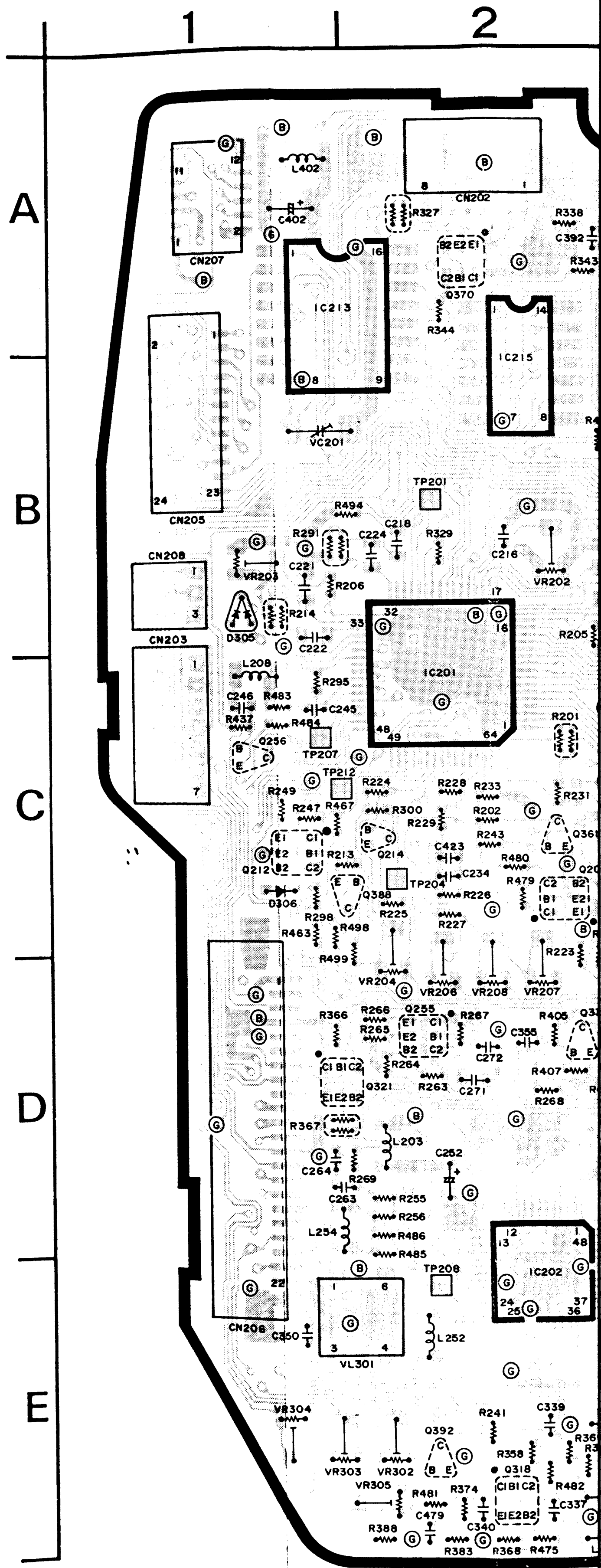
- ○ : Soldering side ⟷ Component side
- Ⓖ : Soldering side (Component side) ⟷ Ground
- Ⓑ : Soldering side (Component side) ⟷ Power Supply

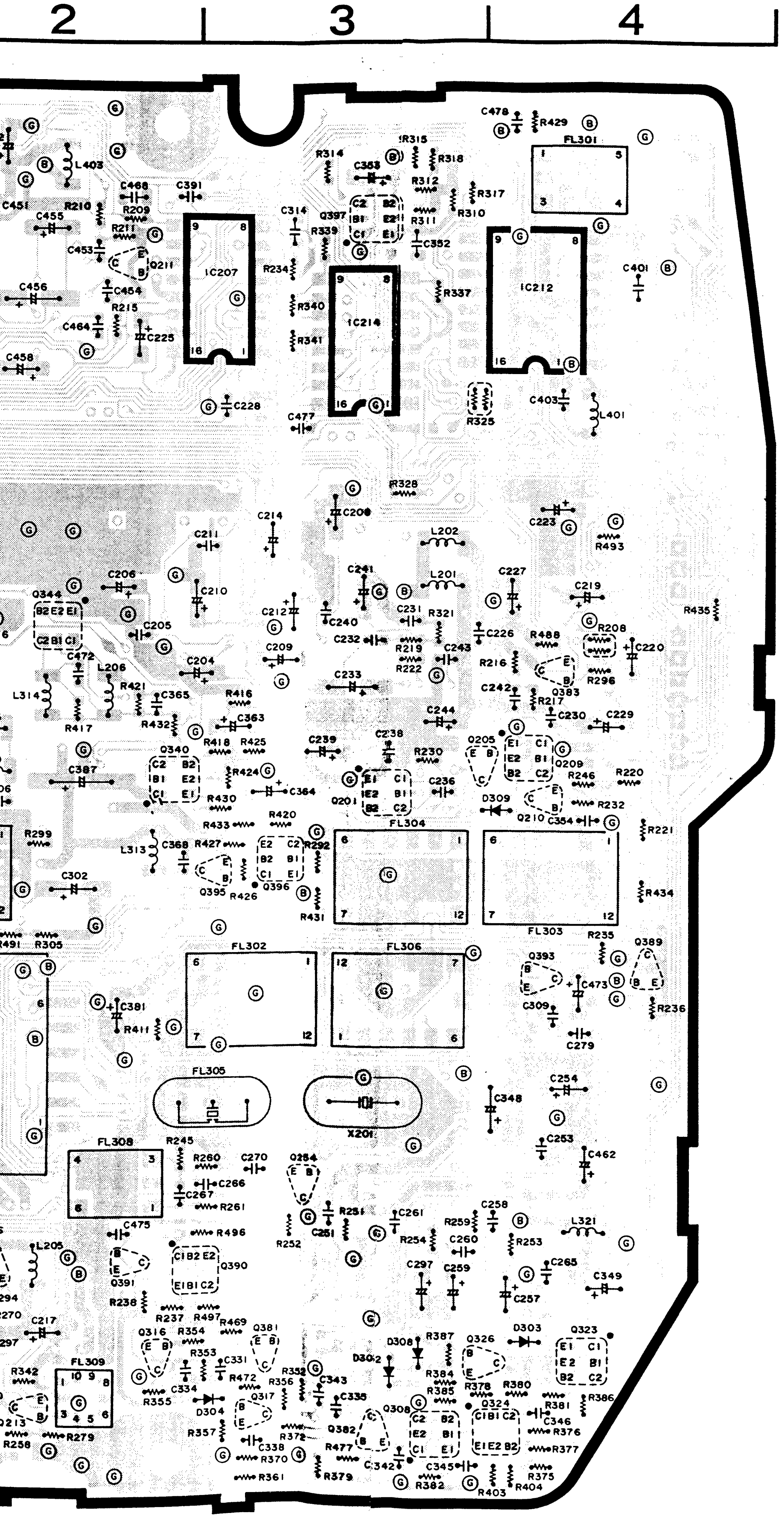
D302	E-3
D303	E-4
D304	E-3
D308	E-3
D309	C-4
IC204	E-1
IC207	A-3
IC212	A-4
IC214	B-3
Q201	C-3
Q203	E-2
Q205	C-3
Q206	E-2
Q207	E-2
Q209	C-4
Q210	C-4
Q211	A-2
Q213	E-2
Q254	D-3
Q308	E-3
Q316	E-2
Q317	E-3
Q323	E-4
Q324	E-4
Q326	E-3
Q340	C-2
Q344	B-2
Q360	C-1
Q381	E-3
Q382	E-3
Q383	C-4
Q385	B-1
Q389	D-4
Q390	E-3
Q391	E-2
Q393	D-4
Q395	C-3
Q396	C-3
Q397	A-3


1
2
3
4
A
B
C
D
E
IC207
IC214
IC212
IC204
FL301
FL302
FL303
FL304
FL305
FL306
FL307
FL308
FL309
FL310
FL311
FL312
M0201
X201
L401
L403
L201
L202
L205
L206
L255
L303
L313
L314
L319
L321

VIDEO P.C.B. (SOLDERING SIDE)

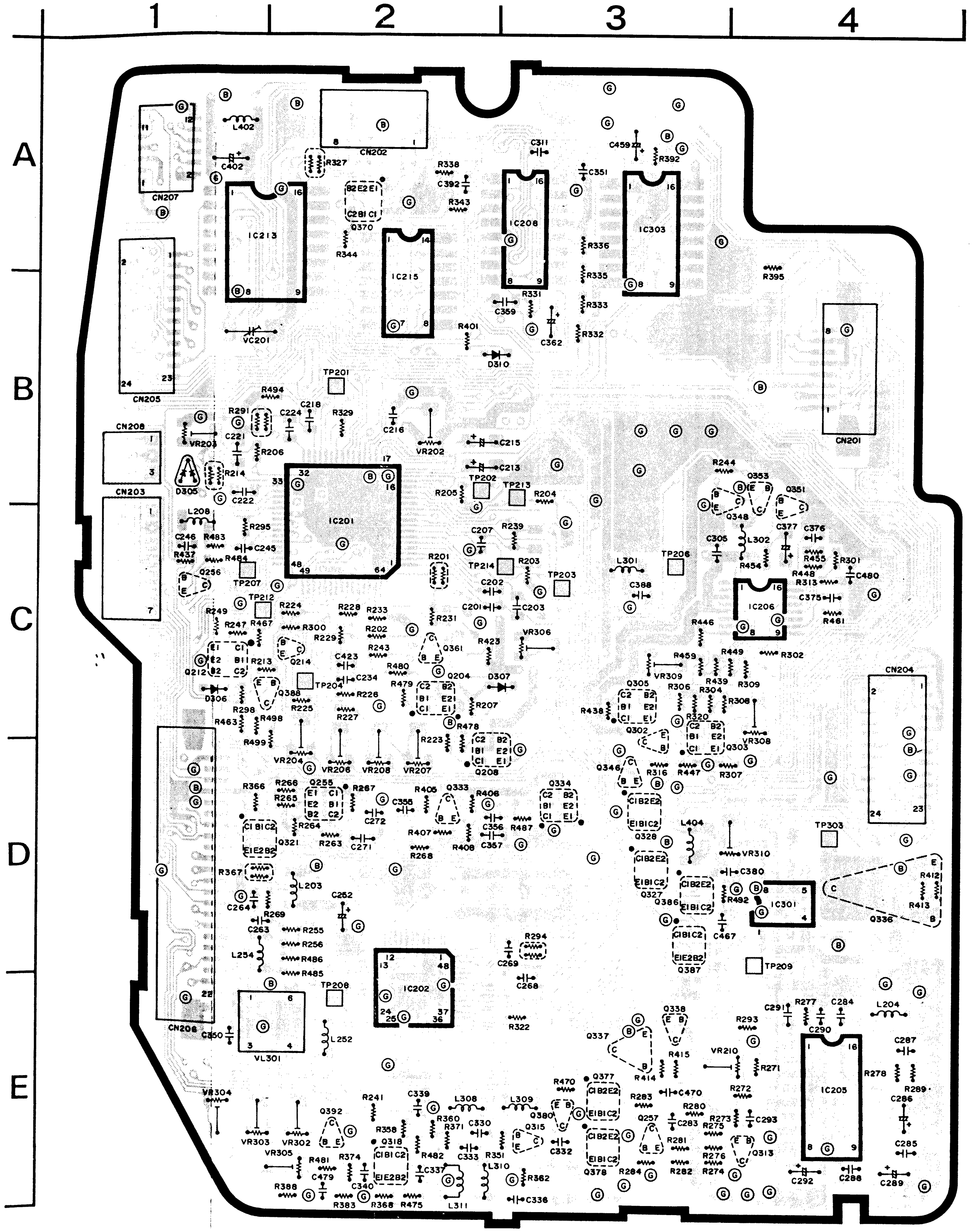
D305	B-1
D306	C-1
D307	C-2
D310	B-2
IC201	C-2
IC202	E-2
IC205	E-4
IC206	C-4
IC208	A-3
IC213	A-1
IC215	B-2
IC301	D-4
IC303	A-3
Q204	C-2
Q208	D-2
Q212	C-1
Q214	C-2
Q255	D-2
Q256	C-1
Q257	E-3
Q302	C-3
Q303	C-3
Q305	C-3
Q313	E-4
Q315	E-3
Q318	E-2
Q321	D-1
Q327	D-3
Q328	D-3
Q333	D-2
Q334	D-3
Q336	D-4
Q337	E-3
Q338	E-3
Q346	D-3
Q348	B-3
Q351	B-4
Q353	B-4
Q361	C-2
Q370	A-2
Q377	E-3
Q378	E-3
Q380	E-3
Q386	D-3
Q387	D-3
Q388	C-1
Q392	E-2
VC201	B-1
VR202	B-2
VR203	B-1
VR204	D-2
VR206	D-2
VR207	D-2
VR208	D-2
VR210	E-4
VR302	E-2
VR303	E-1
VR304	E-1
VR305	E-2
VR306	C-3
VR308	C-4
VR309	C-3
VR310	D-3


1
2
A
B
C
D
E
IC213
IC215
IC201
IC202
CN202
CN203
CN205
CN206
CN207
CN208
VC201
VL301
TP201
TP204
TP207
TP208
TP212
VR202
VR203
VR204
VR206
VR207
VR208
VR302
VR303
VR304
VR305
D305
D306



VIDEO P.C.B. (SOLDERING SIDE)

D305	B-1
D306	C-1
D307	C-2
D310	B-2
IC201	C-2
IC202	E-2
IC205	E-4
IC206	C-4
IC208	A-3
IC213	A-1
IC215	B-2
IC301	D-4
IC303	A-3
Q204	C-2
Q208	D-2
Q212	C-1
Q214	C-2
Q255	D-2
Q256	C-1
Q257	E-3
Q302	C-3
Q303	C-3
Q305	C-3
Q313	E-4
Q315	E-3
Q318	E-2
Q321	D-1
Q327	D-3
Q328	D-3
Q333	D-2
Q334	D-3
Q336	D-4
Q337	E-3
Q338	E-3
Q346	D-3
Q348	B-3
Q351	B-4
Q353	B-4
Q361	C-2
Q370	A-2
Q377	E-3
Q378	E-3
Q380	E-3
Q386	D-3
Q387	D-3
Q388	C-1
Q392	E-2
VC201	B-1
VR202	B-2
VR203	B-1
VR204	D-2
VR206	D-2
VR207	D-2
VR208	D-2
VR210	E-4
VR302	E-2
VR303	E-1
VR304	E-1
VR305	E-2
VR306	C-3
VR308	C-4
VR309	C-3
VR310	D-3



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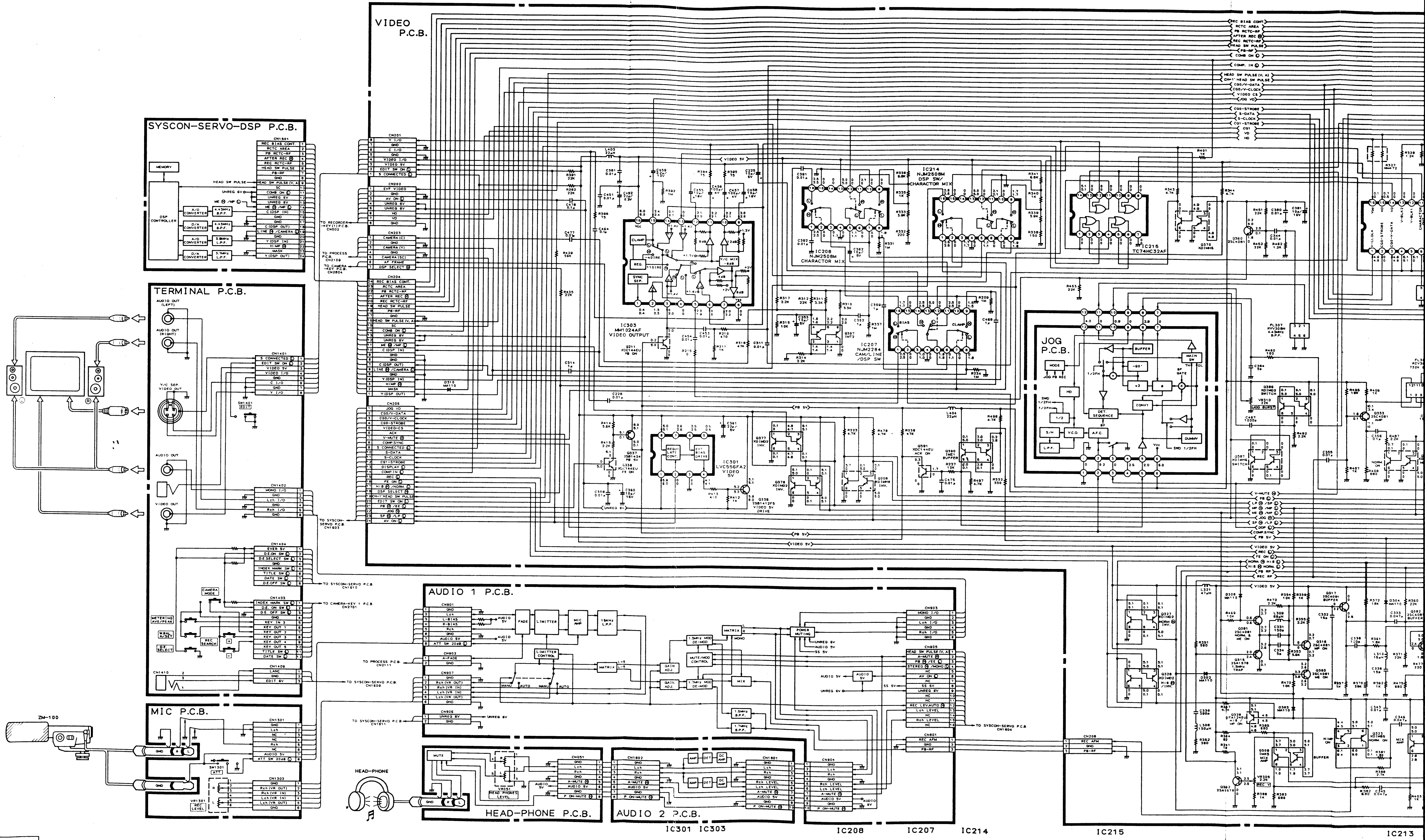
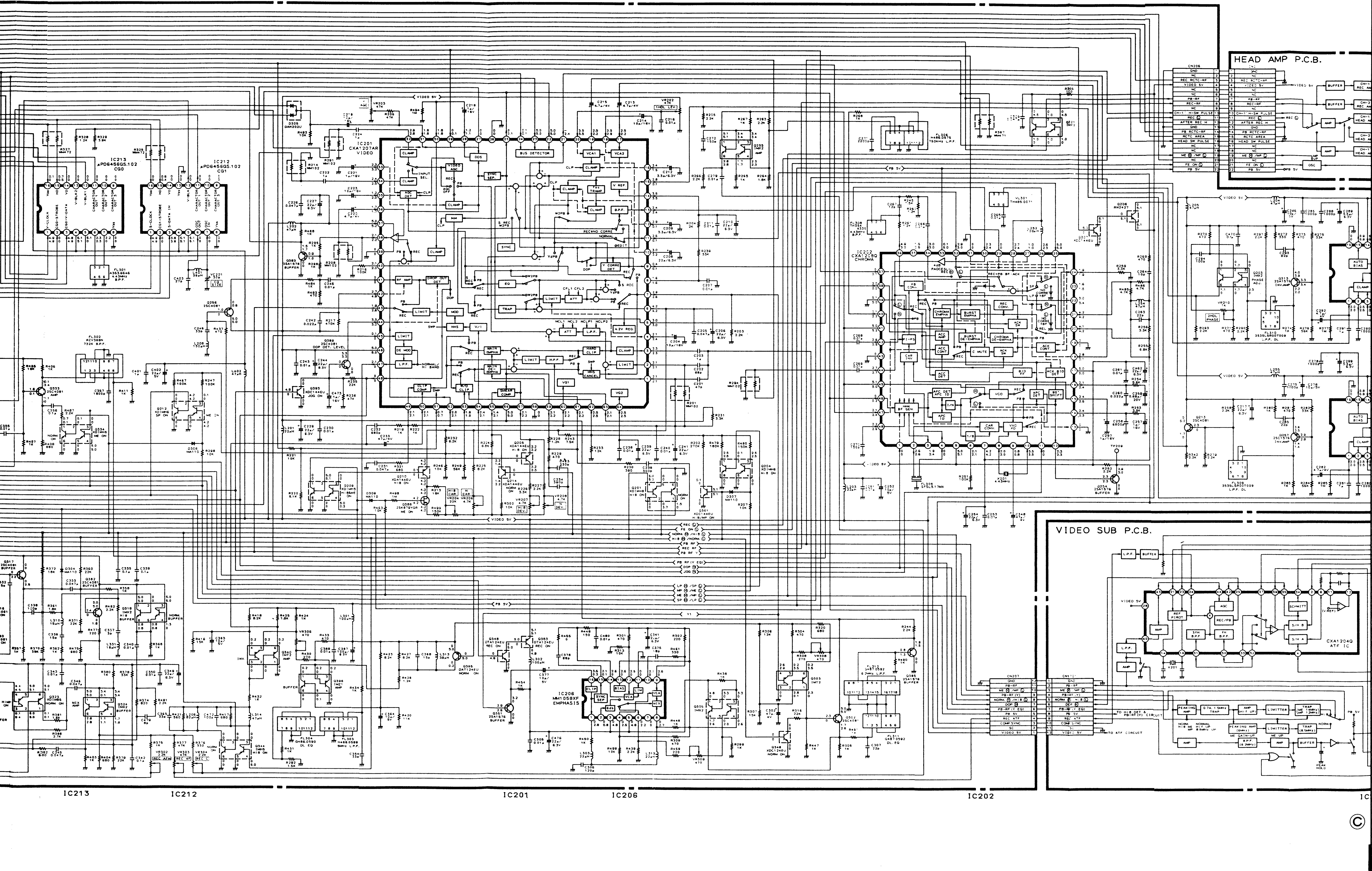
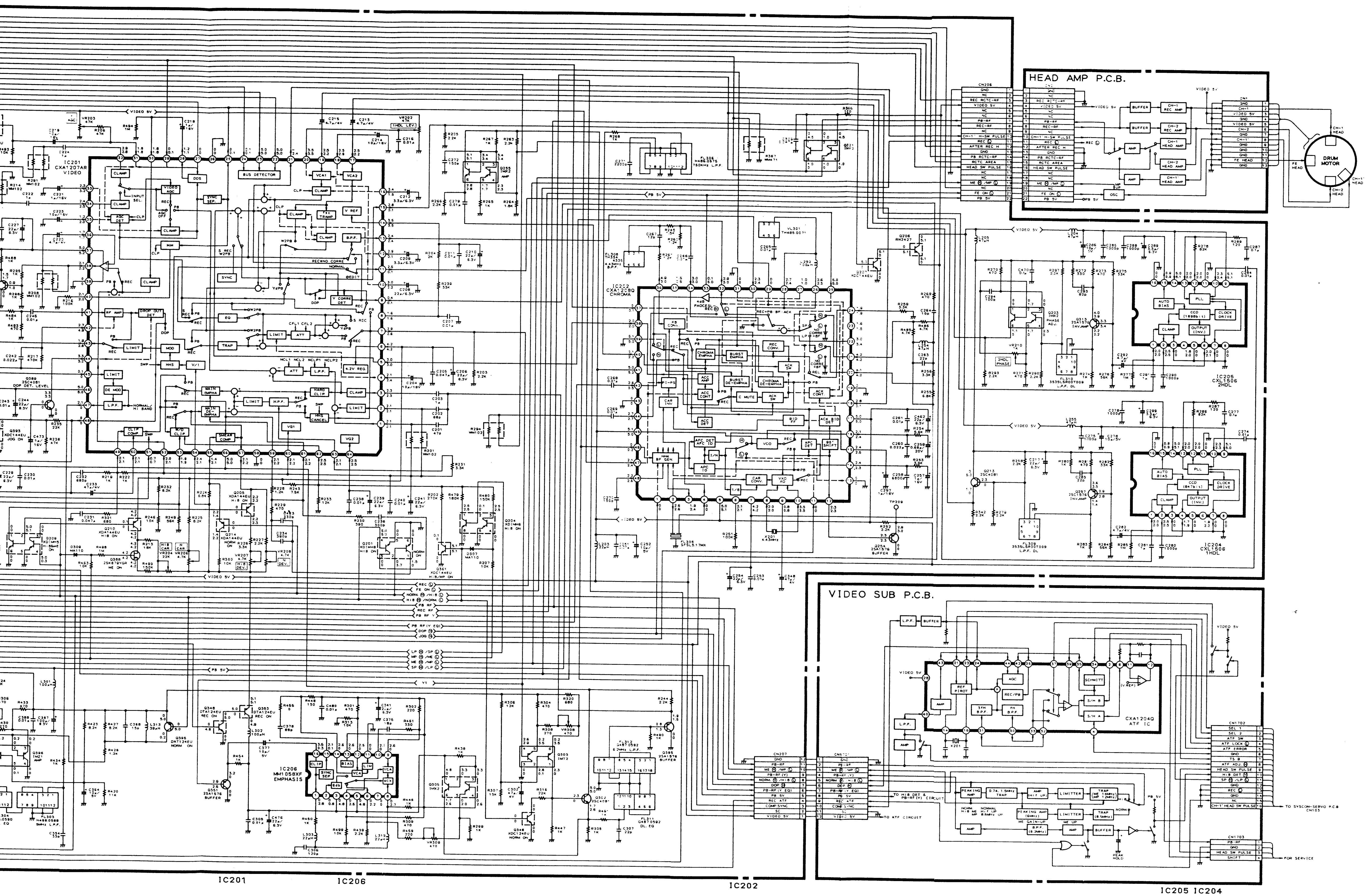
VIDEO P.C.B.


VIDEO P.C.B.
SYSCON-SERVO-DSP P.C.B.
TERMINAL P.C.B.
MIC P.C.B.
AUDIO 1 P.C.B.
AUDIO 2 P.C.B.
HEAD-PHONE P.C.B.
JOG P.C.B.
HEAD-PHONE
ZM-100
IC303 MM1024AF VIDEO OUTPUT
IC208 NJM2508M CHARACTOR MIX
IC214 NJM2508M DSP SW/ CHARACTOR MIX
IC215 TC74HC32AF
IC207 NJM2284 CAM/LINE /DSP SW
IC301 LVC556FA2 VIDEO 5V
CN201
CN202
CN203
CN204
CN205
CN1501
CN1401
CN1402
CN1404
CN1403
CN1409
CN1301
CN1303
CN901
CN902
CN907
CN906
CN903
CN905
CN801
CN804
CN051
CN1802
CN1801
CN208
TO RECORDER KEY(1)P.C.B. CN002
TO PROCESS P.C.B. CN2109
TO CAMERA KEY P.C.B. CN2804
TO SYSCON-SERVO P.C.B. CN1603
TO SYSCON-SERVO P.C.B. CN1610
TO CAMERA-KEY 1 P.C.B. CN2701
TO PROCESS P.C.B. CN2111
TO SYSCON-SERVO P.C.B. CN1609
TO SYSCON-SERVO P.C.B. CN1611
TO SYSCON-SERVO P.C.B. CN1604
IC301 IC303
IC208
IC207
IC214
IC215
IC213

01 Nov. 1993


HEAD AMP P.C.B.
VIDEO SUB P.C.B.
IC213 µPD6456GS.102 CG0
IC212 µPD6456GS.102 CG1
IC201 CXA1207AR VIDEO
IC202 CXA1202Q CHROMA
IC206 MM1058XF EMPHASIS
CXA1204Q ATF IC
CN206
CN207
VIDEO 5V
PB 5V
BUS DETECTOR
CLAMP
VIDEO AGC
SYNC SEP.
VCA1
VCA2
V REF
B.P.F.
DOS
RF AMP
DROP OUT DET
LIMIT
MOD
DE MOD
L.P.F.
EQ
TRAP
ATT
4.2V REG.
MAIN EMPHA
MAIN DE-EMPHA
SHEAR COMP
CLIP COMP
HARD CLIP
H.P.F.
NHS CANCEL
VG1
VG2
CHROMA EMPHA
BURST EMPHA
REC CONV.
ACK SW
ACC AMP
ACC CONT
C MUTE
CHROMA DE-EMPHA
BURST DE-EMPHA
ACK CONT
ACK BID DET
BF GEN
AFC DET
VCO
APC DET
CAR CONV.
VXO
PEAKING AMP
LIMITTER
BUFFER
AMP
OSC
AUTO BIAS
REF PILOT
SCHMITT
AGC
REC/PB
S/H B
S/H A
IC213
IC212
IC201
IC206
IC202
IC
Ⓒ


HEAD AMP P.C.B.
DRUM MOTOR
CH-1 HEAD
CH-2 HEAD
FE HEAD
CH-1' HEAD
IC201
CXA1207AR
VIDEO
IC202
CXA1208Q
CHROMA
IC205
CXL1506
2HDL
IC204
CXL1506
1HDL
IC206
MM1058XF
EMPHASIS
VIDEO SUB P.C.B.
CXA1204Q
ATF IC
TO SYSCON-SERVO P.C.B CN103
FOR SERVICE
IC201
IC206
IC202
IC205 IC204

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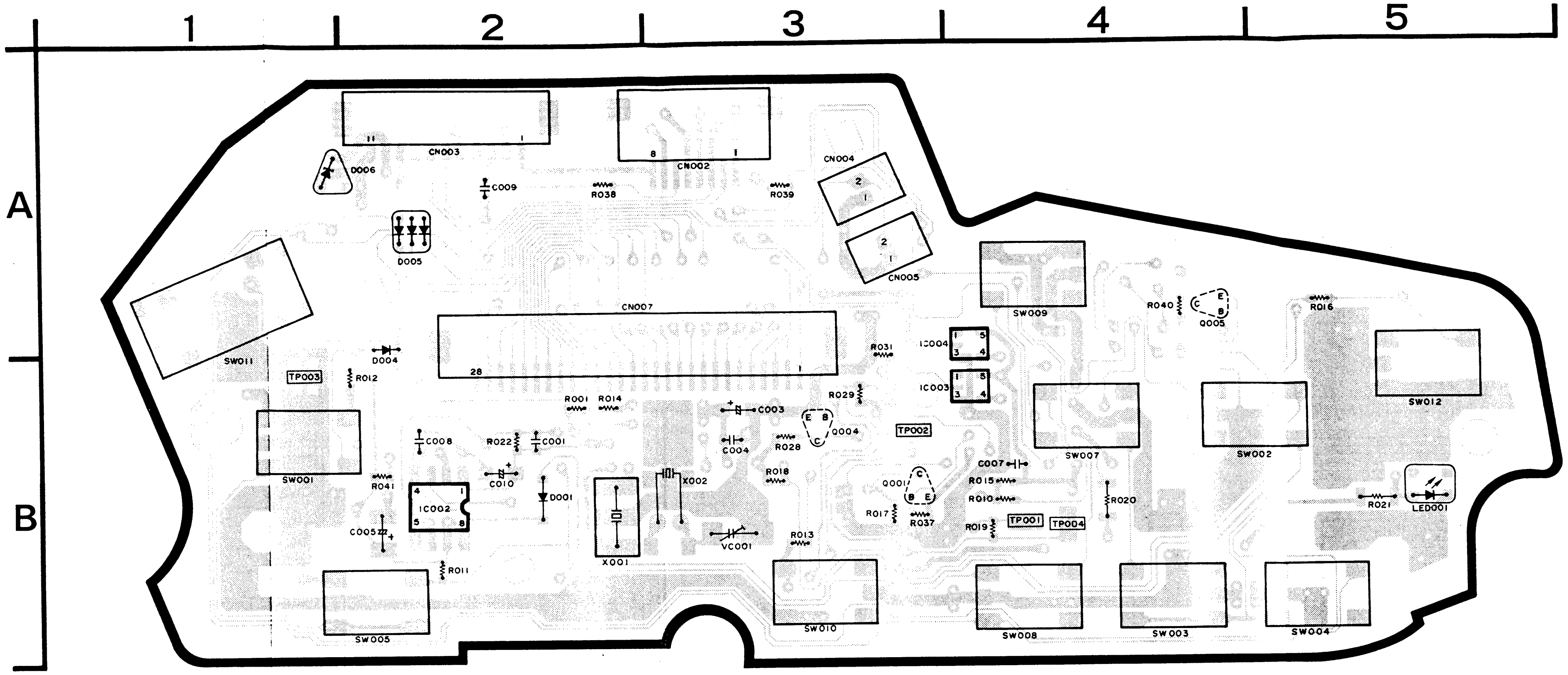
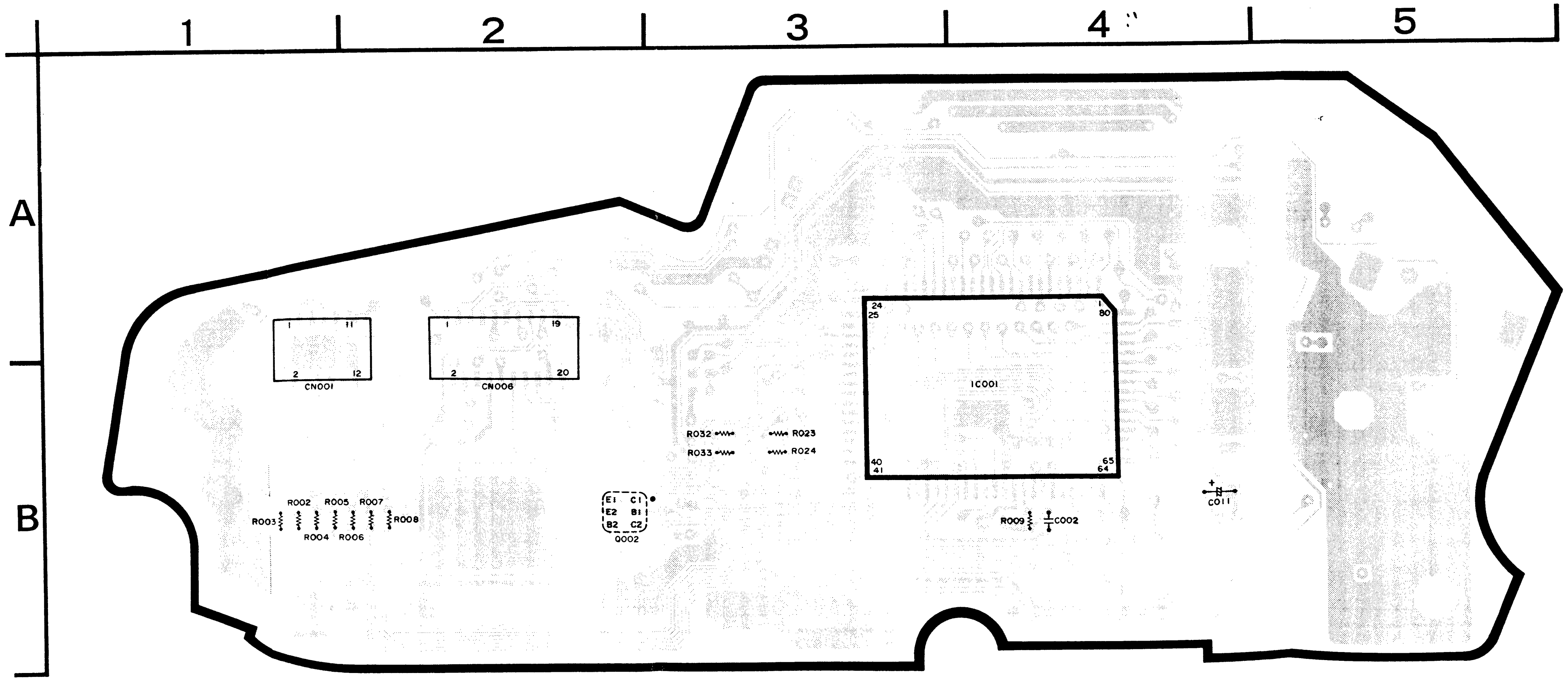
RECORDER–KEY (1) P.C.B. (COMPONENT SIDE)

D001	B-2
D004	B-2
D005	A-2
D006	A-1
IC002	B-2
IC003	B-4
IC004	A-4
Q001	B-3
Q004	B-3
Q005	A-4
VC001	B-3


1
2
3
4
5
A
B
CN003
CN002
CN004
CN005
D006
D005
C009
R038
R039
SW011
D004
TP003
R012
CN007
28
R031
IC004
IC003
R040
Q005
R016
SW009
SW012
R001
R014
C003
R029
Q004
TP002
SW007
SW002
SW001
C008
R022
C001
C004
R028
R041
C010
IC002
D001
X002
R018
Q001
C007
R015
R010
R020
R021
LED001
R017
R037
R019
TP001
TP004
C005
R013
VC001
X001
R011
SW005
SW010
SW008
SW003
SW004

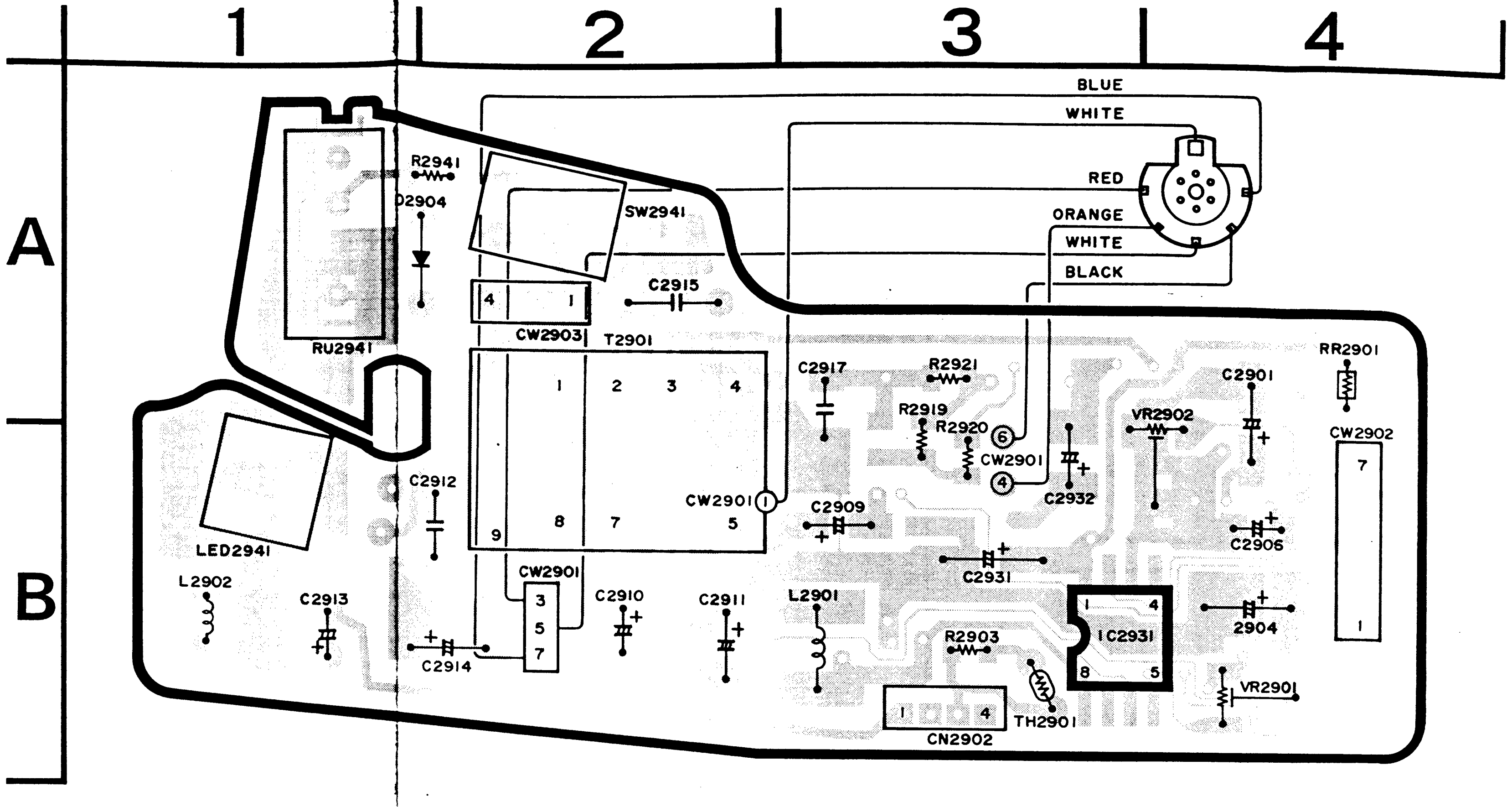
RECORDER–KEY (1) P.C.B. (SOLDERING SIDE)

IC001	B-4
Q002	B-2


1
2
3
4
5
A
B
CN001
CN006
IC001
R032
R033
R023
R024
R002
R005
R007
R003
R004
R006
R008
Q002
R009
C002
C011

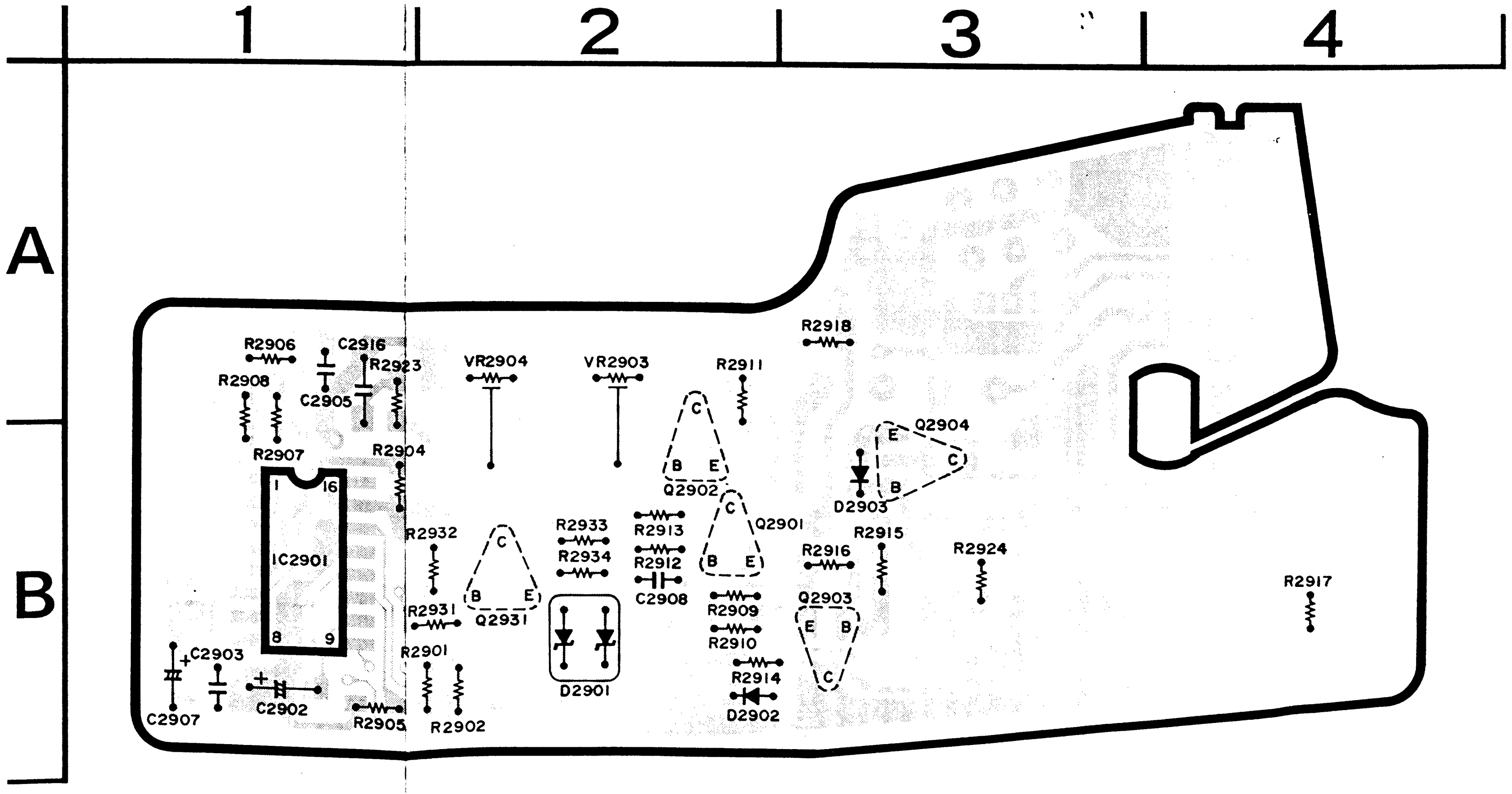
EVF P.C.B. (COMPONENT SIDE)

D2904	A-1
IC2931	B-3
VR2901	B-4
VR2902	B-4


1
2
3
4
A
B
BLUE
WHITE
RED
ORANGE
WHITE
BLACK
R2941
D2904
SW2941
C2915
CW2903
4
1
T2901
RU2941
LED2941
1
2
3
4
9
8
7
5
CW2901
C2912
C2917
R2921
R2919
R2920
CW2901
6
4
C2932
C2909
C2931
VR2902
C2901
RR2901
CW2902
7
1
C2906
L2902
C2913
C2914
CW2901
3
5
7
C2910
C2911
L2901
R2903
IC2931
1
4
8
5
2904
VR2901
CN2902
TH2901

EVF P.C.B. (SOLDERING SIDE)

D2901	B-2
D2902	B-2
D2903	B-3
IC2901	B-1
Q2901	B-2
Q2902	B-2
Q2903	B-3
Q2904	B-3
Q2931	B-2
VR2903	A-2
VR2904	A-2


1
2
3
4
A
B
R2906
C2916
R2923
R2908
C2905
VR2904
VR2903
R2911
R2918
R2904
R2907
IC2901
1
16
8
9
R2932
Q2931
R2933
R2934
R2913
R2912
C2908
Q2902
Q2901
Q2904
D2903
R2916
R2915
R2924
R2917
Q2903
R2931
D2901
R2909
R2910
R2914
D2902
R2901
R2902
R2905
C2903
C2907
C2902
B
C
E

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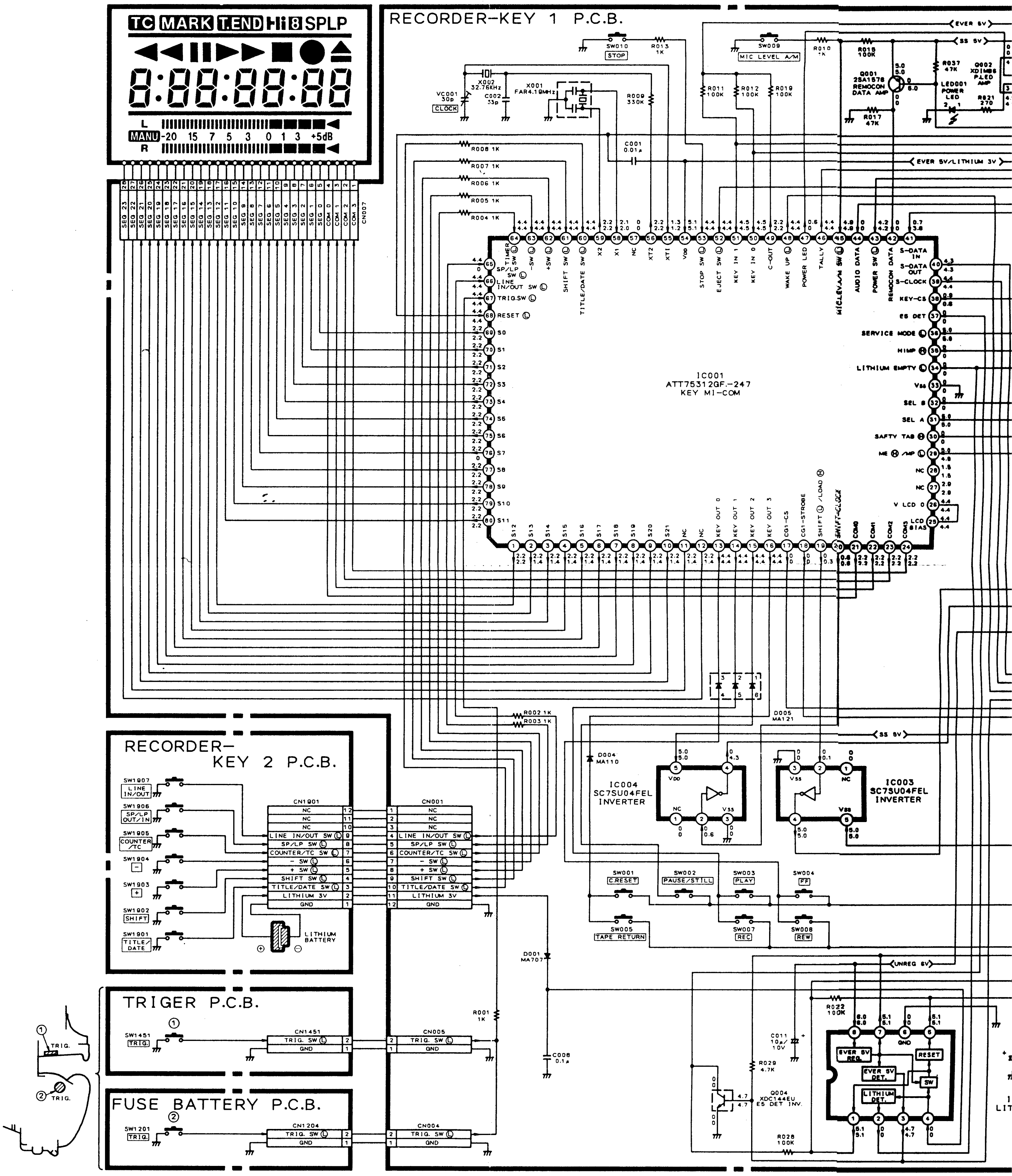
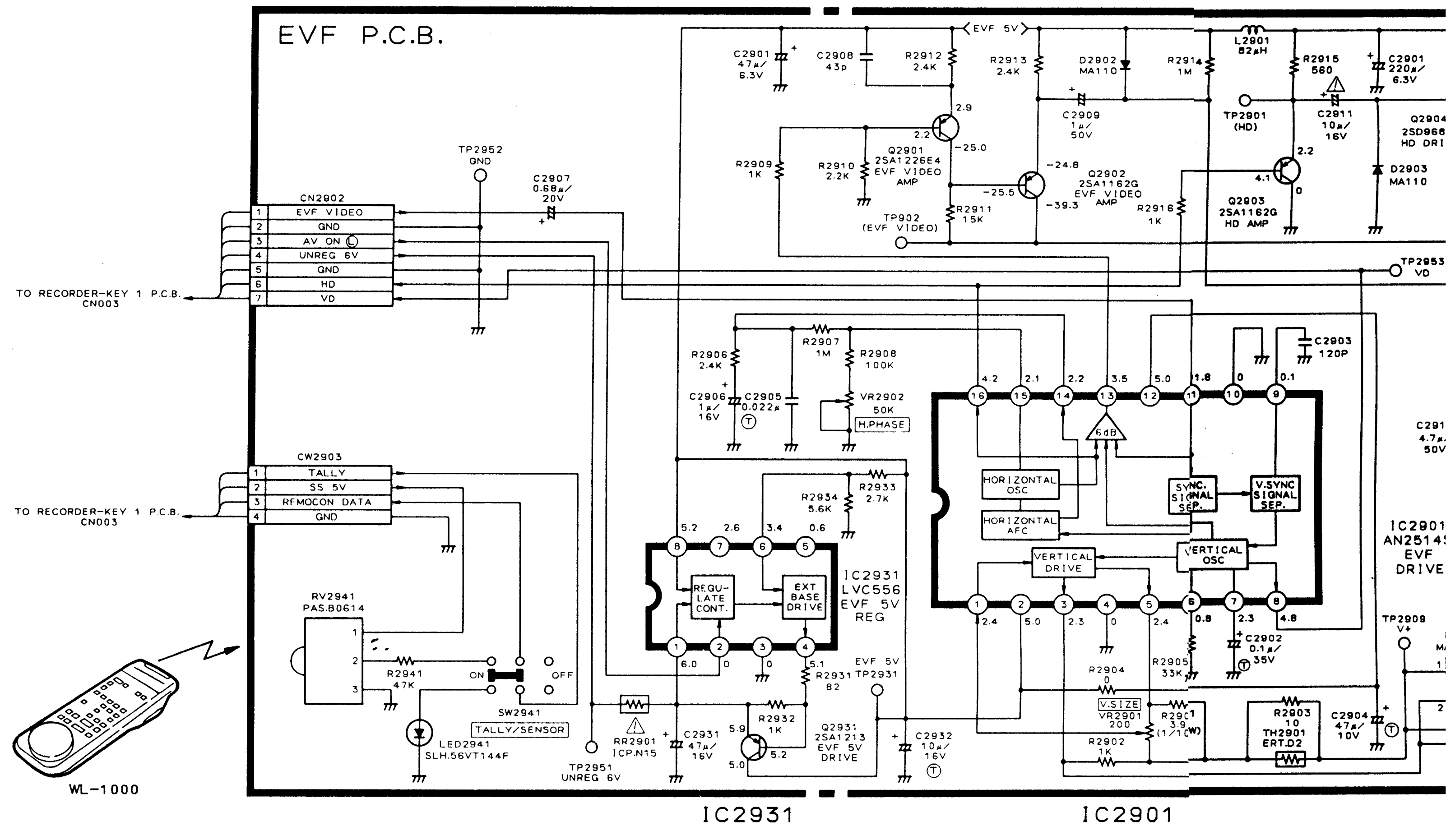
RECORDER–KEY (1) P.C.B.

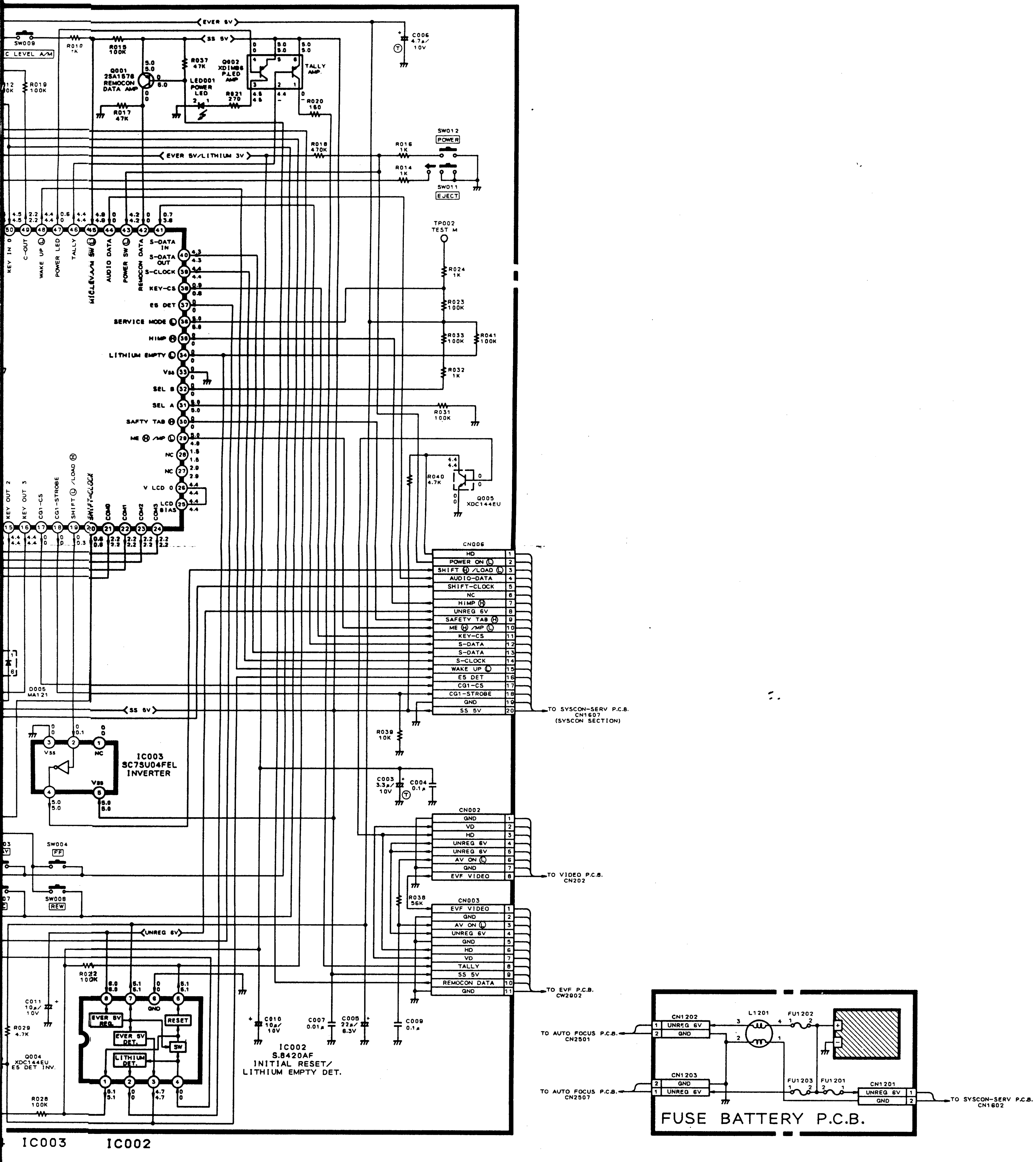

RECORDER–KEY 1 P.C.B.
RECORDER–KEY 2 P.C.B.
TRIGER P.C.B.
FUSE BATTERY P.C.B.
TC MARK T.END Hi8 SPLP
MANU -20 15 7 5 3 0 1 3 +5dB
IC001
ATT75312GF.-247
KEY MI-COM
IC004
SC7SU04FEL
INVERTER
IC003
SC7SU04FEL
INVERTER
X002 32.768KHz
X001 FAR4.19MHz
SW010 STOP
SW009 MIC LEVEL A/M
Q001 2SA1576 REMOCON DATA AMP
LED001 POWER LED
SW001 C.RESET
SW002 PAUSE/STILL
SW003 PLAY
SW004 FF
SW005 TAPE RETURN
SW007 REC
SW008 REW
Q004 XDC144EU ES DET INV
EVER 5V REG.
EVER 5V DET.
LITHIUM DET.
RESET
SW1907 LINE IN/OUT
SW1906 SP/LP OUT/IN
SW1905 COUNTER/TC
SW1904 −
SW1903 +
SW1902 SHIFT
SW1901 TITLE/DATE
LITHIUM BATTERY
SW1451 TRIG.
SW1201 TRIG.
CN1451
CN1204
CN005
CN004
CN1901
CN001
TRIG.

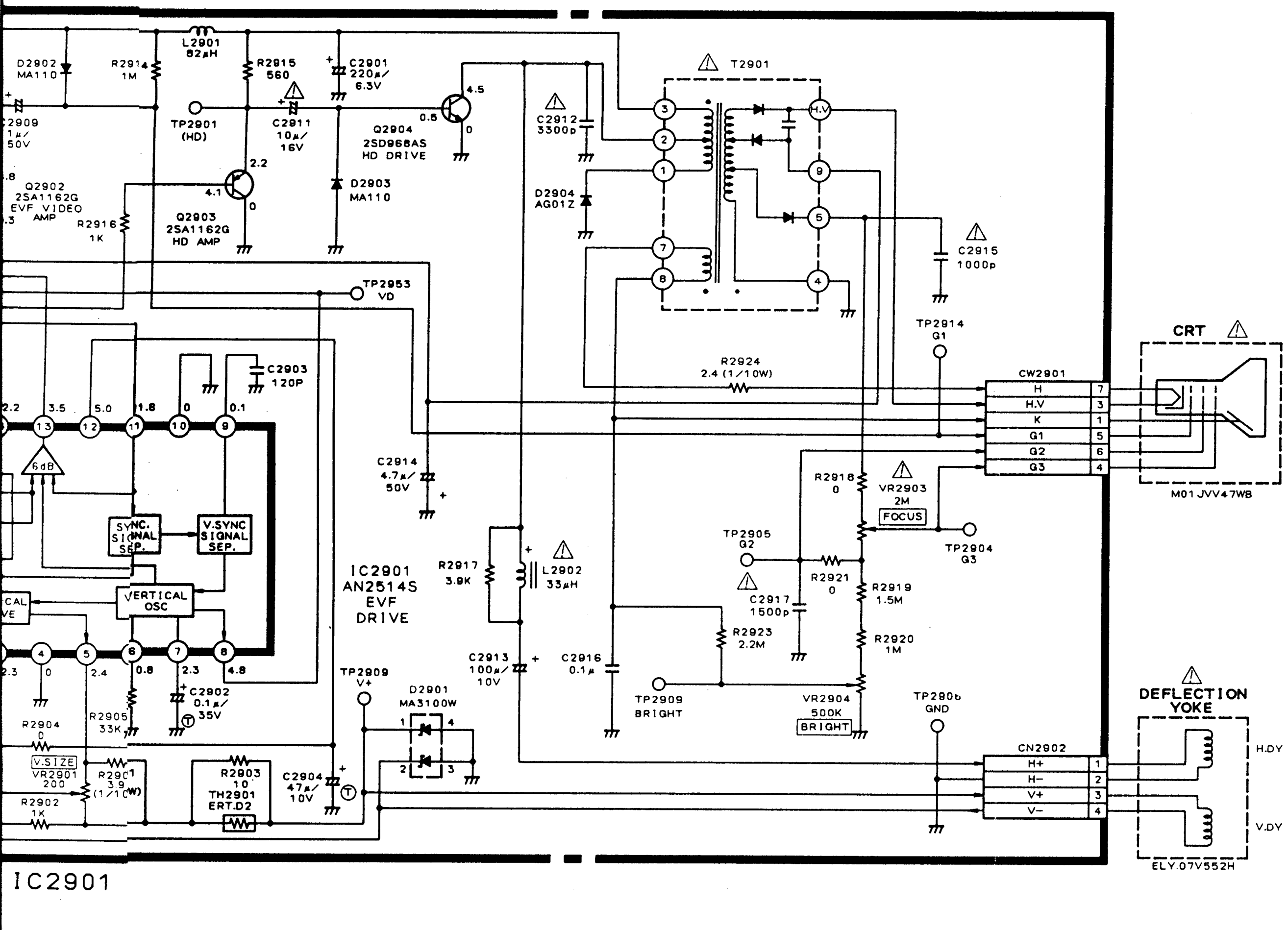
IC001 IC004 IC003 IC002

EVF P.C.B.


EVF P.C.B.
CN2902
EVF VIDEO
GND
AV ON
UNREG 6V
GND
HD
VD
TO RECORDER-KEY 1 P.C.B. CN003
CW2903
TALLY
SS 5V
REMOCON DATA
GND
TO RECORDER-KEY 1 P.C.B. CN003
RV2941 PAS.B0614
SW2941 TALLY/SENSOR
LED2941 SLH.56VT144F
WL-1000
Q2901 2SA1226E4 EVF VIDEO AMP
Q2902 2SA1162G EVF VIDEO AMP
Q2903 2SA1162G HD AMP
IC2931 LVC556 EVF 5V REG
REGU-LATE CONT.
EXT BASE DRIVE
Q2931 2SA1213 EVF 5V DRIVE
HORIZONTAL OSC
HORIZONTAL AFC
VERTICAL DRIVE
VERTICAL OSC
SYNC. SIGNAL SEP.
V.SYNC SIGNAL SEP.
IC2901 AN2514 EVF DRIVE
VR2902 H.PHASE
VR2901 V.SIZE
TP2901 (HD)
TP902 (EVF VIDEO)
TP2952 GND
TP2951 UNREG 6V
TP2931
TP2953 VD

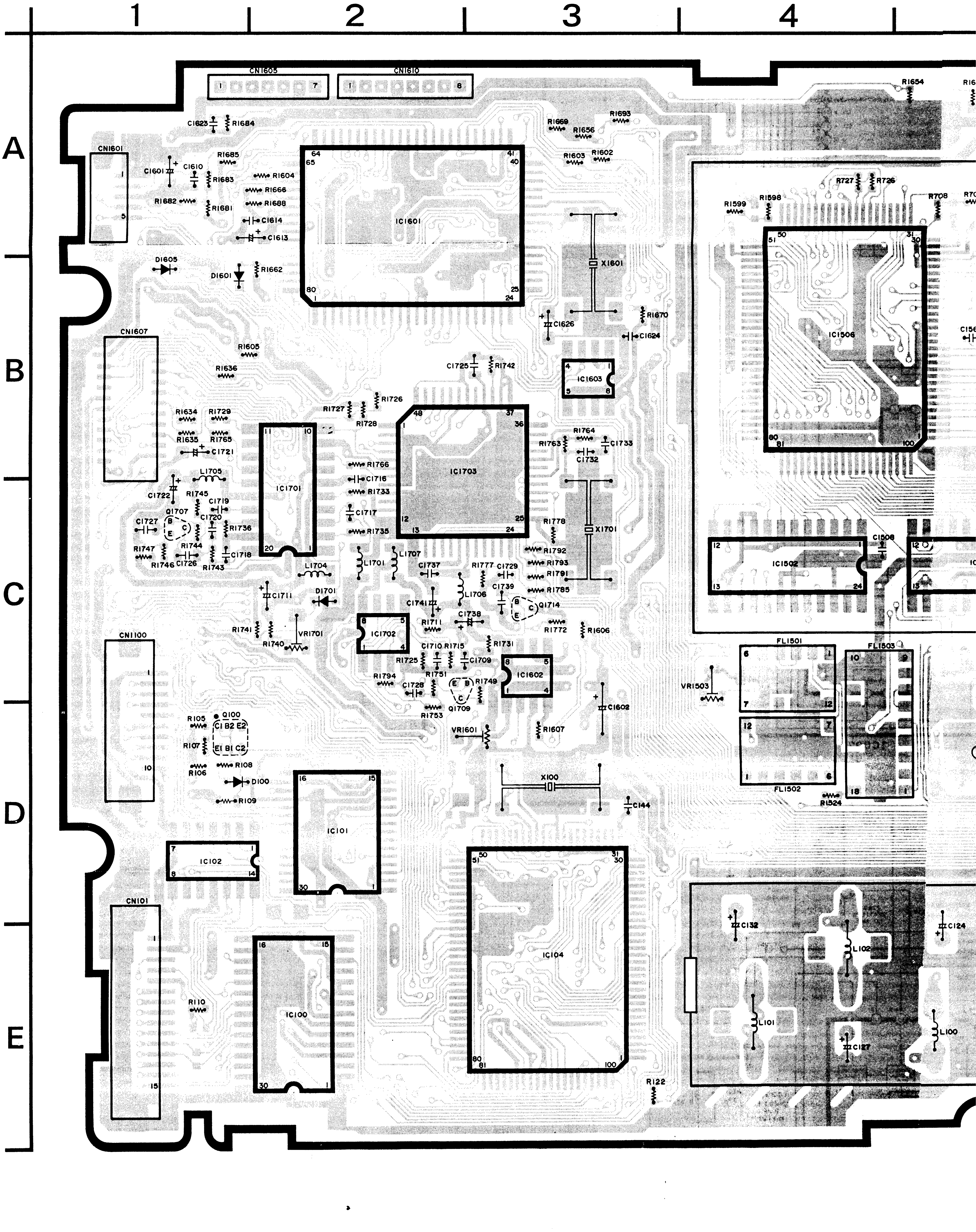
IC2931 IC2901


EVER 5V
SS 5V
EVER 5V/LITHIUM 3V
Q001 2SA1576 REMOCON DATA AMP
Q002 XD1M86 P.LED AMP
TALLY AMP
LED001 POWER LED
SW012 POWER
SW011 EJECT
TP002 TEST M
Q005 XDC144EU
CN006
HD
POWER ON
SHIFT /LOAD
AUDIO-DATA
SHIFT-CLOCK
NC
HIMP
UNREG 6V
SAFETY TAB
ME /MP
KEY-CS
S-DATA
S-DATA
S-CLOCK
WAKE UP
ES DET
CG1-CS
CG1-STROBE
GND
SS 5V
TO SYSCON-SERV P.C.B. CN1607 (SYSCON SECTION)
IC003 SC7SU04FEL INVERTER
CN002
GND
VD
HD
UNREG 6V
UNREG 6V
AV ON
GND
EVF VIDEO
TO VIDEO P.C.B. CN202
CN003
EVF VIDEO
GND
AV ON
UNREG 6V
GND
HD
VD
TALLY
SS 5V
REMOCON DATA
GND
TO EVF P.C.B. CW2902
UNREG 6V
EVER 5V REG.
RESET
EVER 5V DET.
SW
LITHIUM DET.
Q004 XDC144EU ES DET INV
IC002 S.8420AF INITIAL RESET/ LITHIUM EMPTY DET.
IC003
IC002
TO AUTO FOCUS P.C.B. CN2501
TO AUTO FOCUS P.C.B. CN2507
CN1202
UNREG 6V
GND
CN1203
GND
UNREG 6V
L1201
FU1202
FU1203
FU1201
CN1201
UNREG 6V
GND
TO SYSCON-SERV P.C.B. CN1602
FUSE BATTERY P.C.B.


D2902 MA110
L2901 82μH
R2915 560
C2901 220μ/ 6.3V
T2901
Q2904 2SD968AS HD DRIVE
TP2901 (HD)
C2911 10μ/ 16V
C2912 3300p
D2904 AG01Z
Q2902 2SA1162G EVF VIDEO AMP
Q2903 2SA1162G HD AMP
D2903 MA110
C2915 1000p
TP2953 VD
TP2914 G1
C2903 120P
R2924 2.4 (1/10W)
CW2901
H
H.V
K
G1
G2
G3
CRT
M01JVV47WB
6dB
SYNC. SIGNAL SEP.
V.SYNC SIGNAL SEP.
VERTICAL OSC
C2914 4.7μ/ 50V
IC2901 AN2514S EVF DRIVE
R2917 3.9K
L2902 33μH
VR2903 2M FOCUS
TP2905 G2
TP2904 G3
C2917 1500p
R2919 1.5M
R2923 2.2M
R2920 1M
C2902 0.1μ/ 35V
TP2909 V+
D2901 MA3100W
C2913 100μ/ 10V
C2916 0.1μ
TP2909 BRIGHT
VR2904 500K BRIGHT
TP2906 GND
DEFLECTION YOKE
H.DY
V.DY
ELY.07V552H
CN2902
H+
H-
V+
V-
V.SIZE VR2901 200
R2903 10 TH2901 ERT.D2
C2904 47μ/ 10V
IC2901

SYSCON–SERVO P.C.B.(COMPONENT SIDE)

D100	D−1
D1601	B−1
D1605	B−1
D1701	C−2
IC100	E−2
IC101	D−2
IC102	D−1
IC104	E−3
IC1502	C−4
IC1503	C−5
IC1505	C−6
IC1506	B−4
IC1507	B−5
Q100	D−1
Q1501	D−5
Q1510	C−5
Q1514	D−6
Q1608	E−5
Q1609	E−5
Q1613	E−6
Q1614	E−6
Q1616	D−6
Q1709	C−2
Q1714	C−3
VR1502	A−6
VR1503	C−4
VR1504	D−6
VR1601	D−3
VR1701	C−2



1
2
3
4
A
B
C
D
E
CN1605
CN1610
CN1601
CN1607
CN1100
CN101
IC1601
IC1506
IC1603
IC1703
IC1701
IC1702
IC1602
IC1502
IC101
IC102
IC100
IC104
FL1501
FL1502
FL1503
X1601
X1701
X100
D1605
D1601
D1701
D100
Q100
Q1707
Q1709
Q1714
VR1701
VR1601
VR1503
L1701
L1704
L1705
L1706
L1707
L100
L101
L102
C132
C124
C127
C144
C1602
C1601
C1610
C1613
C1614
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R1654
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R1681
R1682
R1604
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R1688
R1662
R1669
R1656
R1693
R1603
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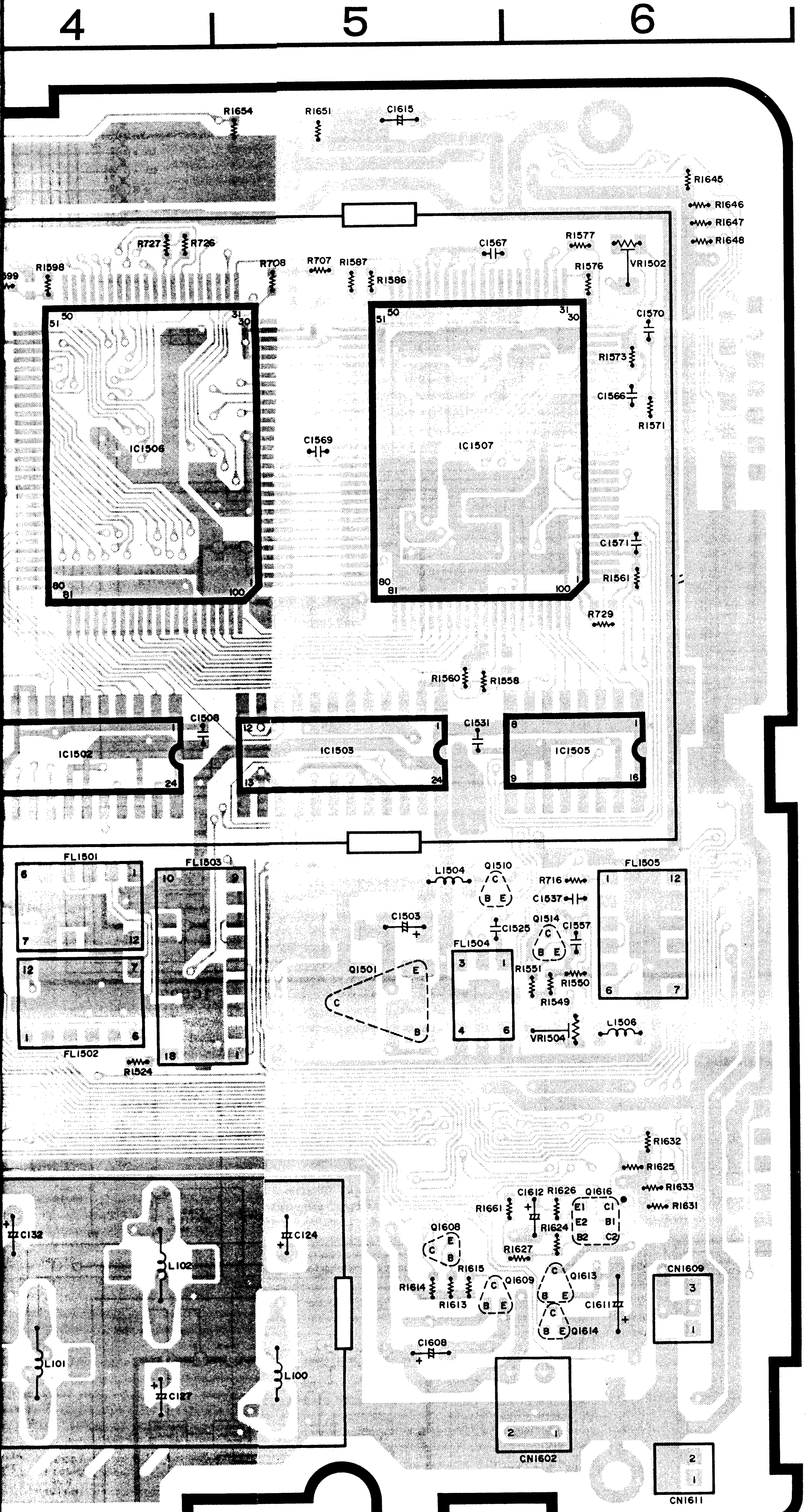
4
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R726
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R1586
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C1571
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R1558
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FL1501
FL1503
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C1611
CN1609
C1608
C132
C124
L102
L101
L100
C127
CN1602
CN1611

SYSCON-SERVO P.C.B.
MEASURED VALUE (V)
(SYSCON SECTION)

	REC	PB
IC1601-1	0	0
-2	5.1	5.1
-3	0	5.1
-4	5.1	5.1
-5	0	0
-6	5.1	5.1
-7	0	0
-8	0	0
-9	0	0
-10	0	0
-11	0.1	5.0
-12	0.1	0.1
-13	5.1	5.1
-14	5.1	5.1
-15	0	0
-16	0	0
-17	5.0	5.0
-18	0	0
-19	0	0
-20	0	0
-21	0	5.0
-22	0	0
-23	0	0
-24	0	0
-25	0	0
-26	0	0
-27	4.7	4.7
-28	0	0.3
-29	0	0
-30	0	0
-31	0	0
-32	5.0	5.0
-33	0	0
-34	2.5	2.5
-35	2.5	2.5
-36	5.1	5.1
-37	4.4	4.4
-38	4.0	4.0
-39	4.9	4.9
-40	5.2	0
-41	5.1	0
-42	4.9	0.1
-43	4.9	4.9
-44	2.5	2.5
-45	2.9	0
-46	5.0	5.0
-47	5.0	5.0
-48	4.9	0
-49	0	0
-50	0	0
-51	3.0	2.9
-52	0	0
-53	5.1	0
-54	5.1	5.1
-55	5.0	5.0
-56	5.0	5.0
-57	5.1	5.1
-58	5.1	0
-59	5.1	5.1
-60	5.0	5.0
-61	5.1	0
-62	5.1	5.1
-63	0	0
-64	0	1.3
-65	0	0
-66	0.9	0
-67	4.5	4.5
-68	0.6	0
-69	5.1	5.1
-70	5.1	0
-71	5.1	0
-72	5.1	5.1
-73	0	0
-74	0	0
-75	0	0
-76	0	0
-77	0	0
-78	5.1	0
-79	5.1	0
-80	5.1	0
IC1602-1	5.9	5.9
-2	0	0
-3	0	0
-4	4.9	0
-5	0.6	0.6
-6	0	3.3
-7	2.6	2.6
-8	0	0
IC1603-1	0	0
-2	0	0
-3	0	0
-4	0	0
-5	0	0
-6	0	0
-7	0	0
-8	5.1	5.1
IC1604-1	0	5.9
-2	0	0
-3	0	0
-4	4.3	4.3
-5	0	0
-6	0	0
-7	1.2	1.2
-8	5.1	5.1
-9	4.7	4.7
-10	0.4	0.5
-11	4.3	4.3
-12	0.4	0.4
-13	0	0
-14	5.6	5.6
IC1605-1	4.8	4.7
-2	5.1	5.1
-3	0	0

	REC	PB
IC1606-1	5.1	5.1
-2	0	0
-3	6.0	5.9
IC1607-1	5.0	5.0
-2	5.0	5.0
-3	0	0
Q1601-1	0	4.2
-2	4.9	0
-3	0	0
-4	0	0
-5	0	0
-6	0	0
Q1602-E	0	0
-C	0	0
-B	0	2.7
Q1604-E	6.0	5.9
-C	5.0	5.0
-B	5.3	5.2
Q1608-E	0	0
-C	4.9	4.9
-B	0	0
Q1609-E	0	0
-C	0	0
-B	0	5.0
Q1611-E	0	5.1
-C	4.9	4.9
-B	0.5	0.5
Q1613-E	0.3	0.3
-C	4.1	4.1
-B	0.5	0.5
Q1614-E	5.0	5.0
-C	0.5	0.5
-B	4.7	4.7
Q1615-1	4.9	0
-2	0.5	0
-3	0	4.1
-4	0.5	0.5
-5	4.2	3.4
-6	0	5.1
Q1616-1	0	0
-2	0	0
-3	0	5.0
-4	0	0
-5	0	0
-6	0	0
Q1617-1	0	0
-2	0	0.8
-3	4.4	4.2
-4	0.9	0.8
-5	1.3	1.2
-6	1.3	1.2
Q1618-1	0.3	0
-2	0.3	0.3
-3	5.0	5.0
-4	0.2	0.3
-5	0	0
-6	0	0

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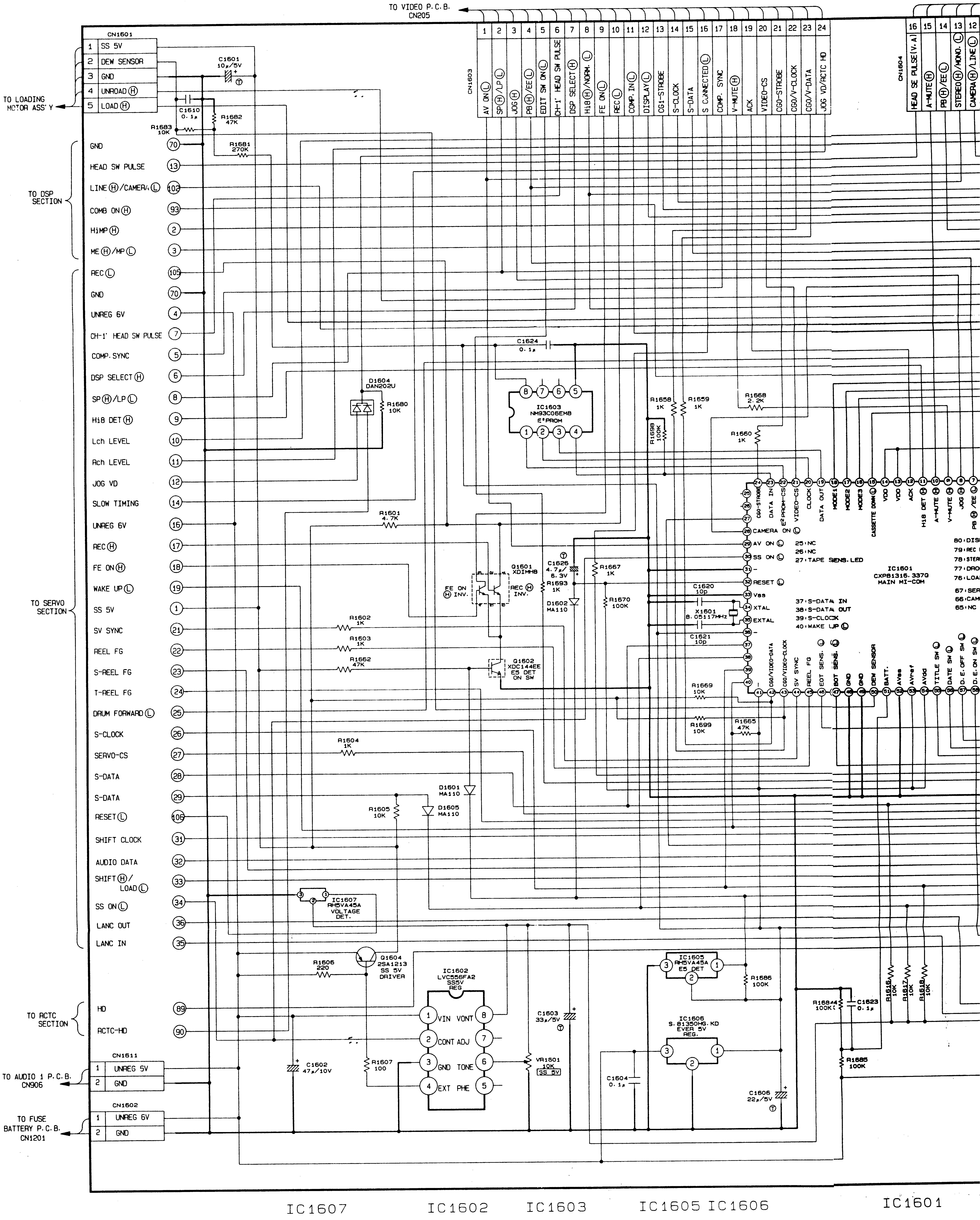
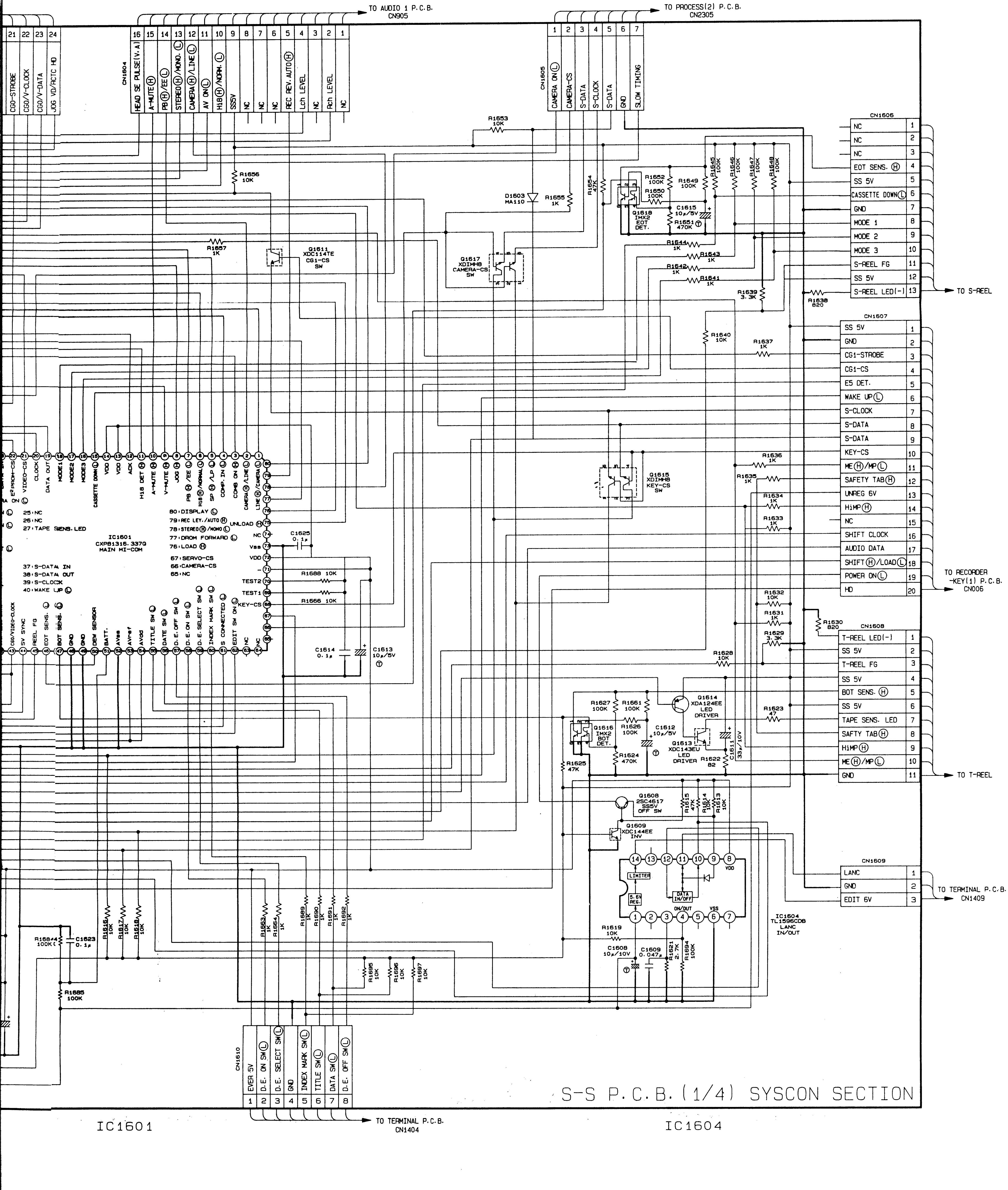
SYSCON-SERVO P.C.B.(1/4) (SYSCON SECTION)


TO VIDEO P.C.B. CN205
CN1601
1 SS 5V
2 DEW SENSOR
3 GND
4 UNROAD Ⓗ
5 LOAD Ⓗ
TO LOADING MOTOR ASS'Y
C1601 10μ/5V
C1610 0.1μ
R1682 47K
R1683 10K
R1681 270K
TO DSP SECTION
GND 70
HEAD SW PULSE 13
LINE Ⓗ/CAMERA Ⓛ 102
COMB ON Ⓗ 93
HiMP Ⓗ 2
ME Ⓗ/MP Ⓛ 3
TO SERVO SECTION
REC Ⓛ 105
GND 70
UNREG 6V 4
CH-1' HEAD SW PULSE 7
COMP. SYNC 5
DSP SELECT Ⓗ 6
SP Ⓗ/LP Ⓛ 8
Hi8 DET Ⓗ 9
Lch LEVEL 10
Rch LEVEL 11
JOG VD 12
SLOW TIMING 14
UNREG 6V 16
REC Ⓗ 17
FE ON Ⓗ 18
WAKE UP Ⓛ 19
SS 5V 1
SV SYNC 21
REEL FG 22
S-REEL FG 23
T-REEL FG 24
DRUM FORWARD Ⓛ 25
S-CLOCK 26
SERVO-CS 27
S-DATA 28
S-DATA 29
RESET Ⓛ 106
SHIFT CLOCK 31
AUDIO DATA 32
SHIFT Ⓗ/LOAD Ⓛ 33
SS ON Ⓛ 34
LANC OUT 36
LANC IN 35
TO RCTC SECTION
HD 89
RCTC-HD 90
CN1611
1 UNREG 5V
2 GND
TO AUDIO 1 P.C.B. CN906
CN1602
1 UNREG 6V
2 GND
TO FUSE BATTERY P.C.B. CN1201
CN1603
1 AV ON Ⓛ
2 SP Ⓗ/LP Ⓛ
3 JOG Ⓗ
4 PB Ⓗ/EE Ⓛ
5 EDIT SW ON Ⓛ
6 CH-1' HEAD SW PULSE
7 DSP SELECT Ⓗ
8 Hi8 Ⓗ/NORM. Ⓛ
9 FE ON Ⓛ
10 REC Ⓛ
11 COMP. IN Ⓛ
12 DISPLAY Ⓛ
13 CG1-STROBE
14 S-CLOCK
15 S-DATA
16 S CONNECTED Ⓛ
17 COMP. SYNC
18 V-MUTE Ⓗ
19 ACK
20 VIDEO-CS
21 CG0-STROBE
22 CG0/V-CLOCK
23 CG0/V-DATA
24 JOG VD/RCTC HD
CN1604
16 HEAD SE PULSE(V.A)
15 A-MUTE Ⓗ
14 PB Ⓗ/EE Ⓛ
13 STEREO Ⓗ/MONO. Ⓛ
12 CAMERA Ⓗ/LINE Ⓛ
C1624 0.1μ
D1604 DAN202U
R1680 10K
IC1603 NM93C06EM8 E²PROM
R1658 1K
R1659 1K
R1668 2.2K
R1698 100K
R1660 1K
R1601 4.7K
Q1601 XDIMH8
FE ON Ⓗ INV.
REC Ⓗ INV.
C1626 4.7μ/6.3V
R1693 1K
R1667 1K
D1602 MA110
R1670 100K
R1602 1K
R1603 1K
R1662 47K
Q1602 XDC144EE E5 DET ON SW
C1620 10p
X1601 8.05117MHz
C1621 10p
R1669 10K
R1699 10K
R1665 47K
R1604 1K
D1601 MA110
R1605 10K
D1605 MA110
IC1601 CXP81316.337Q MAIN MI-COM
CG0-STROBE
DATA IN
E²PROM-CS
VIDEO-CS
CLOCK
DATA OUT
MODE1
MODE2
MODE3
CASSETTE DOWN
VDD
VDD
ACK
Hi8 DET Ⓗ
A-MUTE Ⓗ
V-MUTE Ⓗ
JOG Ⓗ
PB Ⓗ/EE Ⓛ
CAMERA ON Ⓛ
AV ON Ⓛ
SS ON Ⓛ
RESET Ⓛ
Vss
XTAL
EXTAL
25: NC
26: NC
27: TAPE SENS. LED
37: S-DATA IN
38: S-DATA OUT
39: S-CLOCK
40: WAKE UP Ⓛ
80: DISP
79: REC
78: STER
77: DRO
76: LOA
67: SER
66: CAM
65: NC
CG0/VIDEO-DATA
CG0/VIDEO-CLOCK
SV SYNC
REEL FG
EOT SENS.
BOT SENS.
GND
MODE3
DEW SENSOR
BATT.
AVss
AVref
AVdd
TITLE SW Ⓛ
DATE SW Ⓛ
D.E. OFF SW Ⓛ
D.E. ON SW Ⓛ
IC1607 RH5VA45A VOLTAGE DET.
Q1604 2SA1213 SS 5V DRIVER
R1606 220
IC1602 LVC556FA2 SS5V REG
VIN
VONT
CONT ADJ
GND
TONE
EXT
PHE
C1602 47μ/10V
R1607 100
C1603 33μ/5V
VR1601 10K SS 5V
IC1605 RH5VA45A E5 DET
R1686 100K
IC1606 S.81350HG.KD EVER 5V REG.
C1604 0.1μ
C1606 22μ/5V
R1684 100K
C1623 0.1μ
R1615 10K
R1617 10K
R1618 10K
R1685 100K
IC1607
IC1602
IC1603
IC1605
IC1606
IC1601


TO AUDIO 1 P.C.B. CN905
TO PROCESS(2) P.C.B. CN2305
CN1604
HEAD SE PULSE(V.A)
A-MUTE Ⓗ
PB Ⓗ/EE Ⓛ
STEREO Ⓗ/MONO. Ⓛ
CAMERA Ⓗ/LINE Ⓛ
AV ON Ⓛ
Hi8 Ⓗ/NORM. Ⓛ
SSSV
REC REV. AUTO Ⓗ
Lch LEVEL
Rch LEVEL
NC
CG0-STROBE
CG0/V-CLOCK
CG0/V-DATA
JOG VD/RCTC HD
CN1605
CAMERA ON Ⓛ
CAMERA-CS
S-DATA
S-CLOCK
S-DATA
GND
SLOW TIMING
CN1606
NC
NC
NC
EOT SENS. Ⓗ
SS 5V
CASSETTE DOWN Ⓛ
GND
MODE 1
MODE 2
MODE 3
S-REEL FG
SS 5V
S-REEL LED(-)
TO S-REEL
CN1607
SS 5V
GND
CG1-STROBE
CG1-CS
E5 DET.
WAKE UP Ⓛ
S-CLOCK
S-DATA
S-DATA
KEY-CS
ME Ⓗ/MP Ⓛ
SAFETY TAB Ⓗ
UNREG 6V
HiMP Ⓗ
NC
SHIFT CLOCK
AUDIO DATA
SHIFT Ⓗ/LOAD Ⓛ
POWER ON Ⓛ
HD
TO RECORDER -KEY(1) P.C.B. CN006
CN1608
T-REEL LED(-)
SS 5V
T-REEL FG
SS 5V
BOT SENS. Ⓗ
SS 5V
TAPE SENS. LED
SAFTY TAB Ⓗ
HiMP Ⓗ
ME Ⓗ/MP Ⓛ
GND
TO T-REEL
CN1609
LANC
GND
EDIT 6V
TO TERMINAL P.C.B. CN1409
CN1610
EVER 5V
D.E. ON SW Ⓛ
D.E. SELECT SW Ⓛ
GND
INDEX MARK SW Ⓛ
TITLE SW Ⓛ
DATA SW Ⓛ
D.E. OFF SW Ⓛ
TO TERMINAL P.C.B. CN1404
IC1601 CXP81316.337Q MAIN MI-COM
25:NC
26:NC
27:TAPE SENS. LED
37:S-DATA IN
38:S-DATA OUT
39:S-CLOCK
40:WAKE UP Ⓛ
80:DISPLAY Ⓛ
79:REC LEV./AUTO Ⓗ
78:STEREO Ⓗ/MONO Ⓛ
77:DRUM FORWARD Ⓛ
76:LOAD Ⓗ
67:SERVO-CS
66:CAMERA-CS
65:NC
UNLOAD Ⓗ
Vss
VDD
TEST2
TEST1
KEY-CS
Q1611 XDC114TE CG1-CS SW
Q1617 XDIMH8 CAMERA-CS SW
Q1618 IMX2 EOT DET.
Q1615 XDIMH8 KEY-CS SW
Q1614 XDA124EE LED DRIVER
Q1616 IMX2 BOT DET.
Q1613 XDC143EU LED DRIVER
Q1608 2SC4617 SS5V OFF SW
Q1609 XDC144EE INV
D1603 MA110
IC1604 TL1596CDB LANC IN/OUT
LIMITER
5.6V REG.
DATA IN/OFF
ON/OUT
VDD
VSS
R1653 10K
R1656 10K
R1657 1K
R1655 1K
R1654 47K
R1652 100K
R1650 100K
R1649 100K
R1645 100K
R1646 100K
R1647 100K
R1648 100K
C1615 10μ/5V
R1651 470K
R1644 1K
R1643 1K
R1642 1K
R1641 1K
R1639 3.3K
R1638 820
R1640 10K
R1637 1K
R1636 1K
R1635 1K
R1634 1K
R1633 1K
C1625 0.1μ
R1688 10K
R1666 10K
C1614 0.1μ
C1613 10μ/5V
R1632 10K
R1631 1K
R1630 820
R1629 3.3K
R1628 10K
R1627 100K
R1661 100K
R1626 100K
C1612 10μ/5V
R1623 47
R1624 470K
R1622 82
C1611 33μ/10V
R1625 47K
R1615 47K
R1614 10K
R1613 10K
R1619 10K
C1608 10μ/10V
C1609 0.047μ
R1621 2.7K
R1694 100K
R1616 10K
R1617 10K
R1618 10K
R1663 1K
R1664 1K
R1689 1K
R1690 1K
R1691 1K
R1692 1K
R1695 10K
R1696 10K
R1697 10K
R1684 100K
C1623 0.1μ
R1685 100K

S-S P.C.B. (1/4) SYSCON SECTION

IC1601 IC1604

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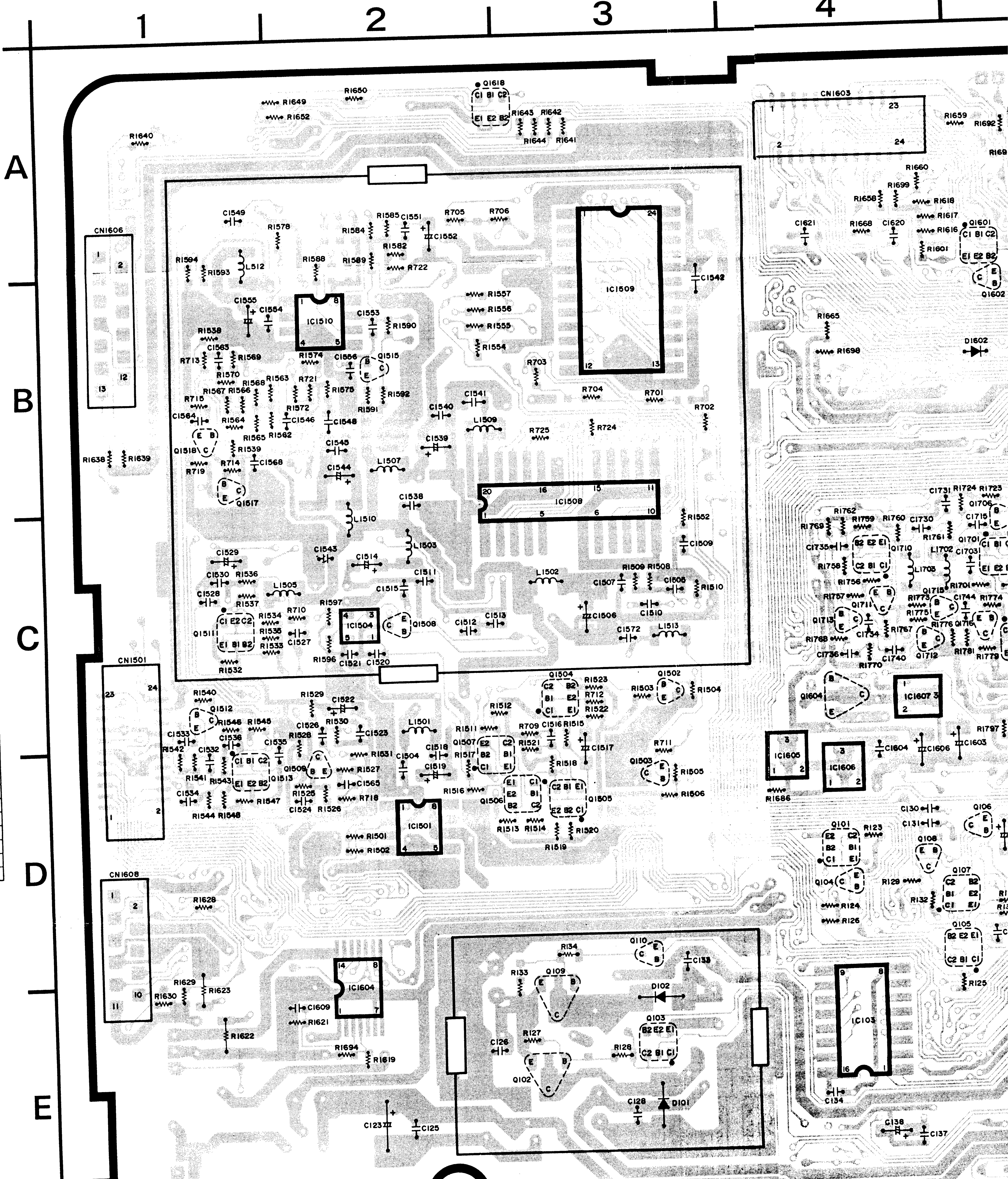
SYSCON-SERVO P.C.B.(SOLDERING SIDE)

D101	E-3
D102	E-3
D103	D-5
D1602	B-5
D1603	A-5
D1604	A-6
IC103	E-4
IC1501	D-2
IC1504	C-2
IC1508	B-3
IC1509	B-3
IC1510	B-2
IC1604	E-2
IC1605	D-4
IC1606	D-4
IC1607	C-4
Q101	D-4
Q102	E-3
Q103	E-3
Q104	D-4
Q105	D-4
Q106	D-5
Q107	D-4
Q108	D-4
Q109	E-3
Q110	D-3
Q1502	C-3
Q1503	D-3
Q1504	C-3
Q1505	D-3
Q1506	D-3
Q1507	D-2
Q1508	C-2
Q1509	D-2
Q1511	C-1
Q1512	C-1
Q1513	D-1
Q1515	B-2
Q1517	B-1
Q1518	B-1
Q1601	A-5
Q1602	B-5
Q1604	C-4
Q1611	A-6
Q1615	A-6
Q1617	A-5
Q1618	A-2
Q1701	C-5
Q1702	C-5
Q1703	C-5
Q1704	C-5
Q1705	C-5
Q1706	C-5
Q1708	C-5
Q1710	C-4
Q1711	C-4
Q1712	C-4
Q1713	C-4
Q1715	C-4
Q1716	C-5
Q1717	C-5


1
2
3
4
A
B
C
D
E
CN1603
CN1606
CN1501
CN1608
IC1509
IC1508
IC1510
IC1504
IC1501
IC1604
IC1605
IC1606
IC1607
IC103
Q1618
Q1601
Q1602
D1602
D101
D102
Q101
Q102
Q103
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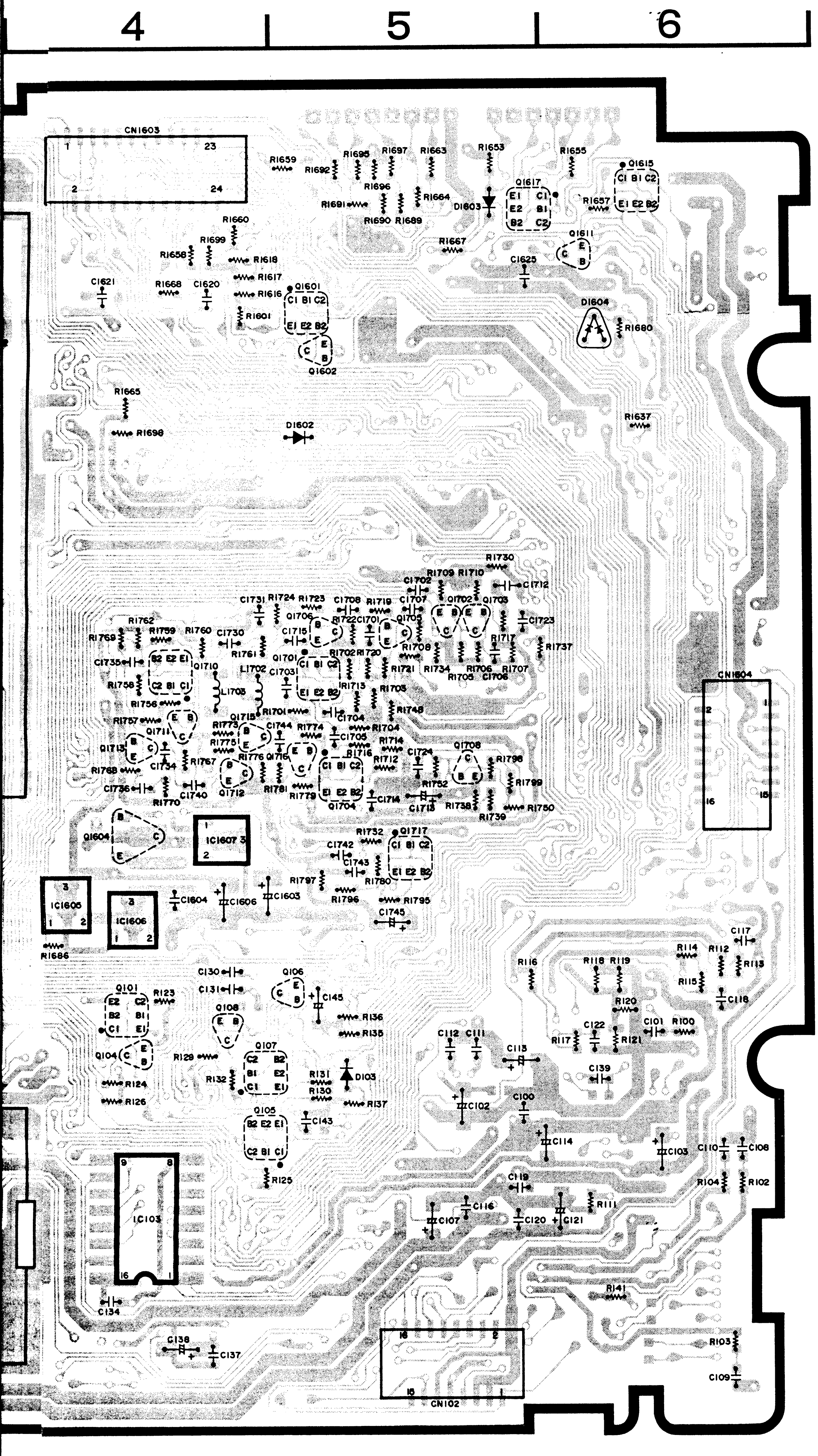
Q106
Q107
Q108
Q109
Q110



SYSCON–SERVO P.C.B. MEASURED VALUE (V)

(SERVO SECTION)

	REC	PB
IC100–1	0	0
–2	0	0
–3	0	0
–4	1.1	1.1
–5	1.1	1.0
–6	1.1	0
–7	0	0
–8	1.9	0
–9	6.1	5.9
–10	5.0	5.0
–11	5.0	0
–12	0	0
–13	0	0
–14	0	0
–15	0	0
–16	0	0
–17	0	0
–18	1.3	1.3
–19	0	0
–20	5.0	5.0
–21	2.0	2.0
–22	1.0	0
–23	1.7	1.7
–24	1.7	1.7
–25	1.7	1.7
–26	0	1.7
–27	1.7	1.7
–28	1.7	1.7
–29	0	0
–30	0	0
IC101–1	0.7	0
–2	0	0
–3	0	0
–4	0	0
–5	0.5	0
–6	1.3	1.3
–7	5.0	5.0
–8	5.2	5.0
–9	5.2	5.0
–10	0	0
–11	0	0
–12	6.1	5.9
–13	1.6	1.7
–14	0.9	0.9
–15	0	0
–16	0.8	0.9
–17	0	0
–18	0.8	0.9
–19	1.7	1.7
–20	0.9	0.9
–21	0.8	0.9
–22	0.9	0.8
–23	0	0.9
–24	3.8	3.8
–25	0.9	0
–26	0.6	0.5
–27	3.8	3.8
–28	0.7	0.6
–29	0.6	0.5
–30	5.0	5.0
IC102–1	2.0	2.0
–2	2.0	2.0
–3	0	0
–4	2.0	0
–5	0	2.0
–6	0	0
–7	0	0
–8	2.0	2.0
–9	0.2	0.2
–10	2.5	2.5
–11	0	0
–12	0	2.6
–13	2.5	2.5
–14	0	0
IC103–1	5.0	5.0
–2	0	0
–3	0	0
–4	0	0
–5	0	0
–6	0	0
–7	5.0	5.0
–8	0	0
–9	0	0
–10	0	0
–11	0	0
–12	0	0
–13	0	0
–14	0	0
–15	0	0
–16	0	0
IC104–1	5.0	5.0
–2	0	0
–3	0	0.1
–4	0	0
–5	0	0
–6	0	4.9
–7	0	0
–8	0	0
–9	0	0
–10	5.0	0
–11	2.5	2.5
–12	0	0
–13	0	0
–14	0	0
–15	5.0	0
–16	0	0
–17	0	0
–18	–	–
–19	0	0
–20	5.1	0.1
–21	0	2.6
–22	0	0
–23	0	0
–24	0	0
–25	0	0
–26	0	0
–27	0	0
–28	0	0
–29	0	0
–30	0	0
–31	1.1	0.4
–32	1.2	0.4
–33	1.2	0.4
–34	1.1	0
–35	1.1	0.4
–36	1.1	0
–37	1.1	0.4
–38	6.1	0
–39	0	0
–40	5.0	5.0
–41	0	0
–42	2.3	2.3
–43	2.5	2.4
–44	4.4	4.4
–45	4.6	4.7
–46	4.6	0.4
–47	4.9	4.9
–48	4.9	0
–49	0	0

	REC	PB
IC104–50	5.0	0
–51	0	0
–52	0	0
–53	5.0	0
–54	5.0	0
–55	0	0
–56	0	n
–57	–	–
–58	–	0
–59	0	0
–60	0	0
–61	0	0
–62	2.6	2.0
–63	0	0
–64	0	0
–65	5.0	0
–66	0.3	0
–67	0	0
–68	0.2	0
–69	2.5	0
–70	2.6	2.6
–71	0	0
–72	0	0
–73	0	0
–74	0	0
–75	0.9	0
–76	1.2	0
–77	2.6	2.6
–78	2.6	2.6
–79	0.5	0.5
–80	0.4	0.5
–81	0.1	0.1
–82	0	0
–83	0	0
–84	0	0
–85	0	0
–86	0	0
–87	5.0	5.0
–88	0	0
–89	5.0	3.0
–90	5.0	0
–91	4.9	0
–92	4.9	0
–93	0	0
–94	0	0
–95	0	2.5
–96	0	3.0
–97	2.5	0
–98	2.3	2.5
–99	2.5	2.5
–100	5.0	5.0
Q100–1	4.3	4.3
–2	4.3	4.3
–3	4.9	4.9
–4	0	0
–5	4.3	4.3
–6	4.6	4.6
Q101–1	6.0	0
–2	0	0
–3	6.0	5.9
–4	6.0	5.9
–5	0	5.9
–6	6.0	0
Q102–E	6.0	5.9
–C	2.0	0
–B	5.7	0
Q103–1	4.1	4.1
–2	1.2	1.2
–3	4.2	4.1
–4	0	0
–5	0	0
–6	0	0
Q104–E	0	0
–C	3.9	4.9
–B	0	0.1
Q105–1	1.7	4.9
–2	0	0.1
–3	1.7	4.9
–4	0	0.1
–5	4.9	4.9
–6	0	0
Q106–E	4.4	4.4
–C	0	4.6
–B	0.6	0.5
Q107–1	4.9	0
–2	0.6	0.5
–3	4.4	4.4
–4	0	0
–5	0	0
–6	0	0
Q108–E	0	0
–C	0.6	0.5
–B	4.4	0
Q109–E	6.0	5.9
–C	0	0
–B	5.7	5.6
Q110–E	0	0
–C	4.5	4.4
–B	0.8	0.8

(RCTC SECTION)

	REC	PB
IC1701–1	3.9	3.9
–2	0	0
–3	0	0
–4	0	0
–5	0	0
–6	0	0
–7	0	0
–8	0	0
–9	0	0
–10	0	1.8
–11	0	3.6
–12	0	–
–13	0	0
–14	0.9	0
–15	2.5	2.4
–16	0	0
–17	0	2.4
–18	3.8	0
–19	0	0
–20	0	2.4
IC1702–1	5.0	0
–2	1.8	2.1
–3	1.8	0
–4	0	0
–5	0	3.3
–6	0	0
–7	0	0
–8	5.0	0
IC1703–1	5.0	0
–2	0	1.3
–3	0.9	0
–4	0	5.0
–5	4.1	1.8
–6	0	0
–7	4.9	1.9
–8	5.0	5.0
–9	0	0
–10	0	0
–11	0	0
–12	0	0
–13	0	0
–14	0	0
–15	1.0	0
–16	0	0
–17	5.0	0
–18	0	0
–19	5.0	5.0
–20	0	0
–21	5.0	5.0
–22	0	0
–23	2.5	2.5
–24	0	2.5
–25	0	0
–26	0	0
–27	0	0.8
–28	0	0
–29	0	0
–30	2.6	2.6
–31	0	0
–32	2.5	2.5
–33	0	5.0
–34	0	5.0
–35	0	0
–36	0	0
–37	0	0
–38	0	0
–39	0	0
–40	5.0	5.0
–41	5.0	5.0
–42	0	0
–43	5.0	0
–44	4.6	4.6
–45	4.9	0
–46	4.6	4.4
–47	4.9	4.9
–48	0	0
Q1701–1	5.0	5.0
–2	1.5	1.5
–3	5.0	0
–4	5.0	5.0
–5	4.4	4.4
–5	0.9	0.9
Q1702–E	3.9	3.9
–C	5.0	5.0
–B	4.5	0
Q1703–E	2.2	2.2
–C	0	0
–B	2.9	4.5
Q1704–1	5.0	0
–2	2.2	2.2
–3	0	5.0
–4	2.3	2.3
–5	1.8	1.8
–6	0	2.1
Q1705–E	1.9	1.9
–C	5.0	5.0
–B	2.5	2.5
Q1706–E	1.3	1.3
–C	5.0	5.0
–B	1.9	1.9
Q1707–E	1.8	1.8
–C	3.3	0
–B	2.5	2.5
Q1708–E	0	5.0
–C	0	0
–B	4.8	4.8
Q1709–E	5.0	5.0
–C	0	5.0
–B	4.9	4.4
Q1710–1	5.0	4.3
–2	2.4	1.9
–3	0	0
–4	2.0	0
–5	1.6	1.4
–6	1.6	1.4
Q1711–E	2.5	4.2
–C	5.0	5.0
–B	3.2	4.3
Q1712–E	3.0	2.4
–C	0	0
–B	2.5	2.5
Q1713–E	0.5	0.4
–C	2.4	2.1
–B	1.1	1.0
Q1714–E	0	2.0
–C	5.0	5.0
–B	2.8	2.4
Q1715–E	0.5	0.5
–C	3.9	3.9
–B	1.1	1.1
Q1716–E	4.3	3.9
–C	0	0
–B	3.9	3.9
Q1717–1	5.0	5.0
–2	4.1	3.7
–3	0	0
–4	4.1	3.7
–5	3.7	3.3
–6	3.7	3.2

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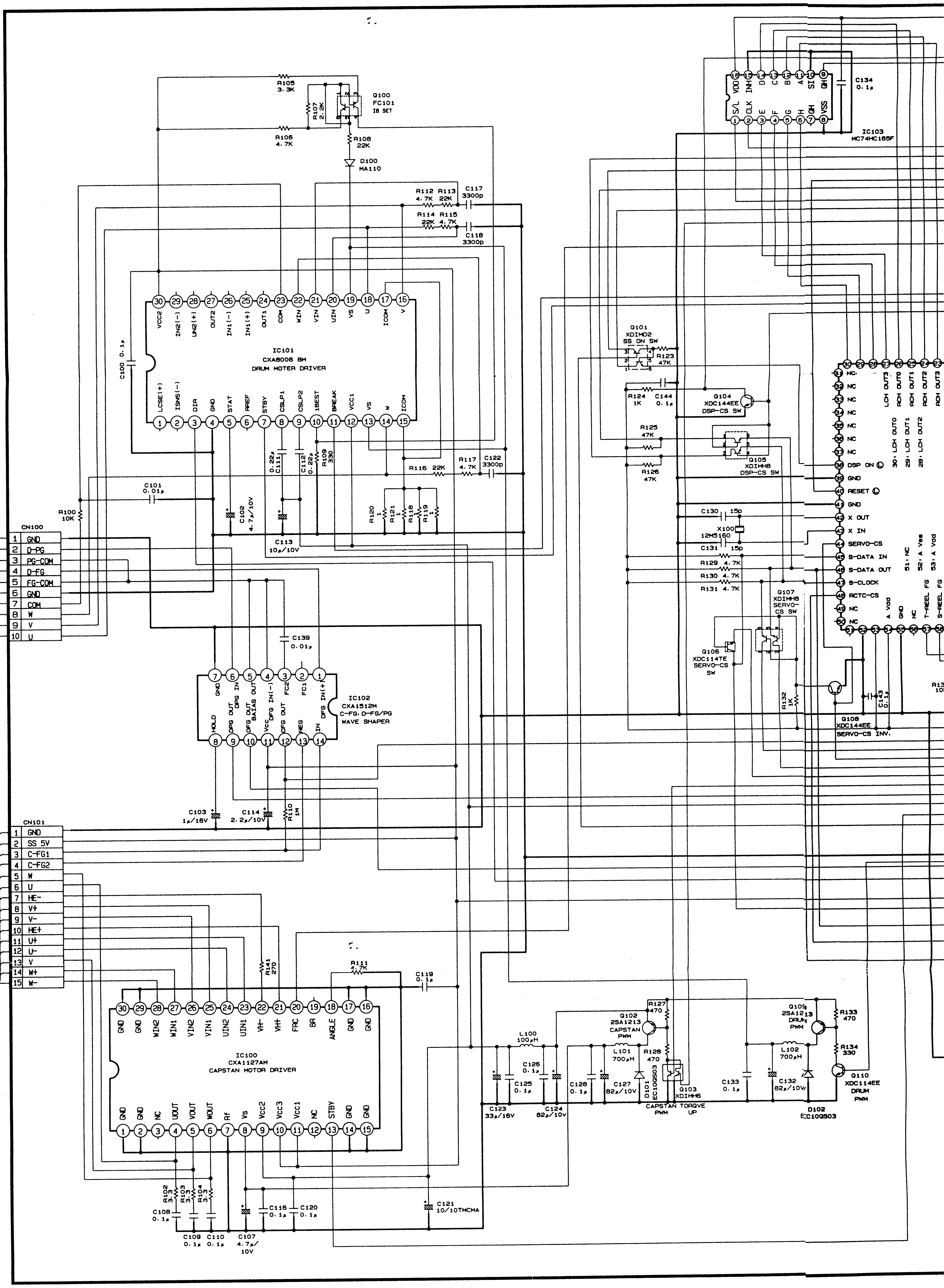
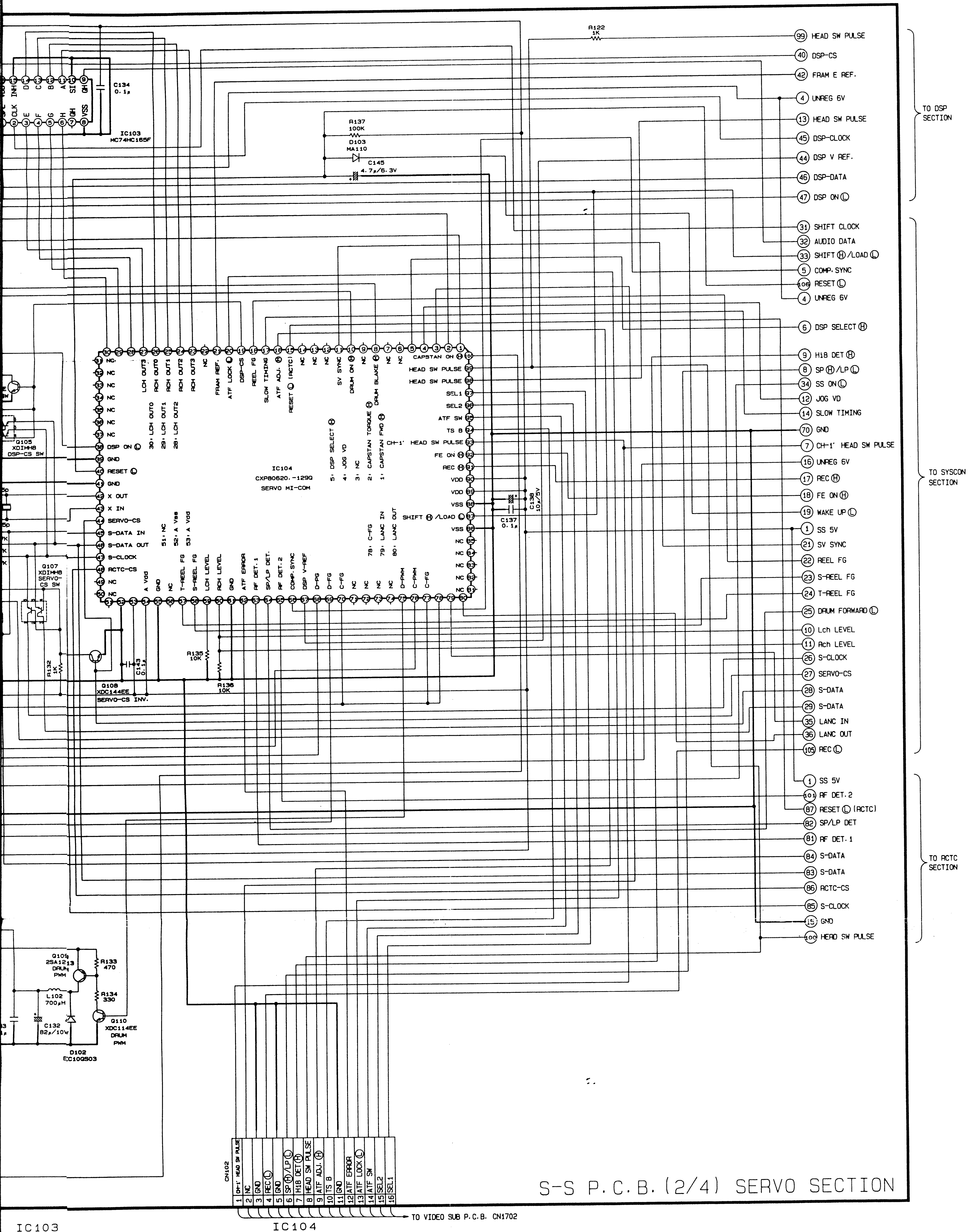
SYSCON-SERVO P.C.B.(2/4) (SERVO SECTION)


IC101
CXA8006 BM
DRUM MOTER DRIVER
IC102
CXA1512M
C-FG, D-FG/PG
WAVE SHAPER
IC100
CXA1127AM
CAPSTAN MOTOR DRIVER
IC103
MC74HC165F
Q100
FC101
IB SET
D100
MA110
Q101
XDIMD2
SS ON SW
Q104
XDC144EE
DSP-CS SW
Q105
XDIMH8
DSP-CS SW
Q106
XDC114TE
SERVO-CS
SW
Q107
XDIMH8
SERVO-
CS SW
Q108
XDC144EE
SERVO-CS INV.
Q102
2SA1213
CAPSTAN
PWM
Q103
XDIMH6
CAPSTAN TORQVE
PWM UP
Q109
2SA1213
DRUM
PWM
Q110
XDC114EE
DRUM
PWM
D101
EC10QS03
D102
EC10QS03
X100
12M5160
L100
100μH
L101
700μH
L102
700μH
CN100
1 GND
2 D-PG
3 PG-COM
4 D-FG
5 FG-COM
6 GND
7 COM
8 W
9 V
10 U
TO DRUM
MOTOR ASS'Y
CN101
1 GND
2 SS 5V
3 C-FG1
4 C-FG2
5 W
6 U
7 HE-
8 V+
9 V-
10 HE+
11 U+
12 U-
13 V
14 W+
15 W-
TO CAPSTAN
MOTOR ASS'Y
R105 3.3K
R106 4.7K
R107 2.2K
R108 22K
R112 4.7K
R113 22K
R114 22K
R115 4.7K
C117 3300p
C118 3300p
C100 0.1μ
C101 0.01μ
R100 10K
C102 4.7μ/10V
C111 0.22μ
C112 0.22μ
R109 330
C113 10μ/10V
R116 22K
R117 4.7K
C122 3300p
R120
R121
R118
R119 1
C139 0.01μ
C103 1μ/16V
C114 2.2μ/10V
R110 1M
R141 270
R111 4.7K
C119 0.1μ
R102 3.3
R103 3.3
R104 3.3
C108 0.1μ
C109 0.1μ
C110 0.1μ
C107 4.7μ/10V
C116 0.1μ
C120 0.1μ
C121 10/10TMCMA
C123 33μ/16V
C124 82μ/10V
C125 0.1μ
C126 0.1μ
C128 0.1μ
C127 82μ/10V
R127 470
R128 470
C133 0.1μ
C132 82μ/10V
R133 470
R134 330
R123 47K
R124 1K
C144 0.1μ
R125 47K
R126 47K
C130 15p
C131 15p
R129 4.7K
R130 4.7K
R131 4.7K
R132 1K
C143 0.1μ
C134 0.1μ
VCC2
IN2(-)
IN2(+)
OUT2
IN1(-)
IN1(+)
OUT1
COM
WIN
VIN
UIN
VS
U
ICOM
V
LCSE(+)
ISNS(-)
DIR
GND
STAT
AREF
STBY
CSLP1
CSLP2
1BEST
BREAK
VCC1
W
HOLD
DPG OUT
DPG IN
DFG OUT
BAIAS OUT
Vcc
DFG IN(-)
CFG OUT
FC2
NEG
FC1
IN
DFG IN(+)
WIN2
WIN1
VIN2
VIN1
UIN2
UIN1
VH-
VH+
FRC
BR
ANGLE
NC
UOUT
VOUT
WOUT
Rf
Vs
Vcc2
Vcc3
Vcc1
S/L
CLK
E
F
G
H
QH
VSS
VDD
INH
D
C
B
A
SI
NC
DSP ON
RESET
X OUT
X IN
SERVO-CS
S-DATA IN
S-DATA OUT
S-CLOCK
RCTC-CS
LCH OUT3
RCH OUT0
RCH OUT1
RCH OUT2
RCH OUT3
30: LCH OUT0
29: LCH OUT1
28: LCH OUT2
51: NC
52: A Vss
53: A Vdd
A Vdd
T-REEL FG
S-REEL FG

IC100 IC102 IC101 IC103


R122 1K
99 HEAD SW PULSE
40 DSP-CS
42 FRAM E REF.
4 UNREG 6V
13 HEAD SW PULSE
45 DSP-CLOCK
44 DSP V REF.
46 DSP-DATA
47 DSP ON Ⓛ
TO DSP SECTION
31 SHIFT CLOCK
32 AUDIO DATA
33 SHIFT Ⓗ/LOAD Ⓛ
5 COMP. SYNC
106 RESET Ⓛ
4 UNREG 6V
6 DSP SELECT Ⓗ
9 Hi8 DET Ⓗ
8 SP Ⓗ/LP Ⓛ
34 SS ON Ⓛ
12 JOG VD
14 SLOW TIMING
70 GND
7 CH-1' HEAD SW PULSE
16 UNREG 6V
17 REC Ⓗ
18 FE ON Ⓗ
19 WAKE UP Ⓛ
1 SS 5V
21 SV SYNC
22 REEL FG
23 S-REEL FG
24 T-REEL FG
25 DRUM FORWARD Ⓛ
10 Lch LEVEL
11 Rch LEVEL
26 S-CLOCK
27 SERVO-CS
28 S-DATA
29 S-DATA
35 LANC IN
36 LANC OUT
105 REC Ⓛ
TO SYSCON SECTION
1 SS 5V
101 RF DET. 2
87 RESET Ⓛ (RCTC)
82 SP/LP DET
81 RF DET. 1
84 S-DATA
83 S-DATA
86 RCTC-CS
85 S-CLOCK
15 GND
100 HEAD SW PULSE
TO RCTC SECTION
C134 0.1μ
IC103 MC74HC165F
R137 100K
D103 MA110
C145 4.7μ/6.3V
IC104 CXP80620.-129Q SERVO MI-COM
CAPSTAN ON Ⓗ
HEAD SW PULSE
HEAD SW PULSE
SEL1
SEL2
ATF SW
TS B
CH-1' HEAD SW PULSE
FE ON Ⓗ
REC Ⓗ
VDD
VDD
VSS
SHIFT Ⓗ/LOAD Ⓛ
VSS
NC
C136 10μ/5V
C137 0.1μ
NC
DSP ON Ⓛ
GND
RESET Ⓛ
GND
X OUT
X IN
SERVO-CS
S-DATA IN
S-DATA OUT
S-CLOCK
RCTC-CS
LCH OUT3
RCH OUT0
RCH OUT1
RCH OUT2
RCH OUT3
FRAM REF.
ATF LOCK Ⓛ
DSP-CS
REEL FG
SLOW TIMING
ATF ADJ. Ⓗ
RESET Ⓛ (RCTC)
SV SYNC
DRUM ON Ⓗ
DRUM BLAKE Ⓗ
30: LCH OUT0
29: LCH OUT1
28: LCH OUT2
5: DSP SELECT Ⓗ
4: JOG VD
3: NC
2: CAPSTAN TORQUE Ⓗ
1: CAPSTAN FWD Ⓗ
51: NC
52: A Vss
53: A Vdd
78: C-FG
79: LANC IN
80: LANC OUT
A Vdd
GND
T-REEL FG
S-REEL FG
LCH LEVEL
RCH LEVEL
ATF ERROR
RF DET. 1
SP/LP DET.
RF DET. 2
COMP. SYNC
DSP V-REF
D-PG
D-FG
C-FG
D-PWM
C-PWM
Q105 XDIMH8 DSP-CS SW
Q107 XDIMH8 SERVO-CS SW
R132 1K
C143 0.1μ
Q108 XDC144EE SERVO-CS INV.
R135 10K
R136 10K
Q109 2SA1213 DRUM PWM
R133 470
R134 330
L102 700μH
C132 82μ/10W
Q110 XDC114EE DRUM PWM
D102 EC10QS03
CN102
1 CH-1' HEAD SW PULSE
2 NC
3 GND
4 REC Ⓛ
5 GND
6 SP Ⓗ/LP Ⓛ
7 Hi8 DET Ⓗ
8 HEAD SW PULSE
9 ATF ADJ. Ⓗ
10 TS B
11 GND
12 ATF ERROR
13 ATF LOCK Ⓛ
14 ATF SW
15 SEL2
16 SEL1
TO VIDEO SUB P.C.B. CN1702

S-S P.C.B. (2/4) SERVO SECTION

IC103

IC104

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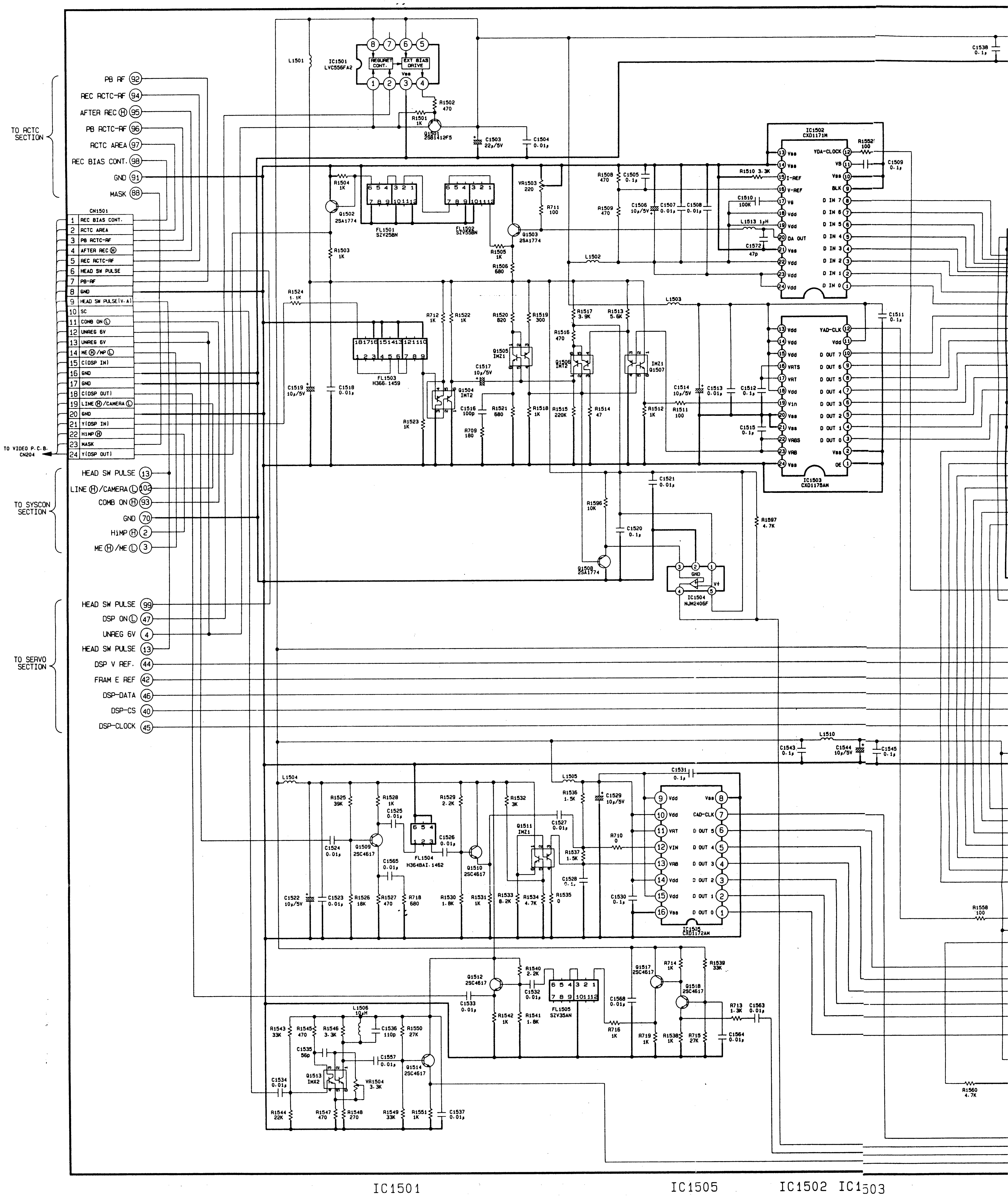
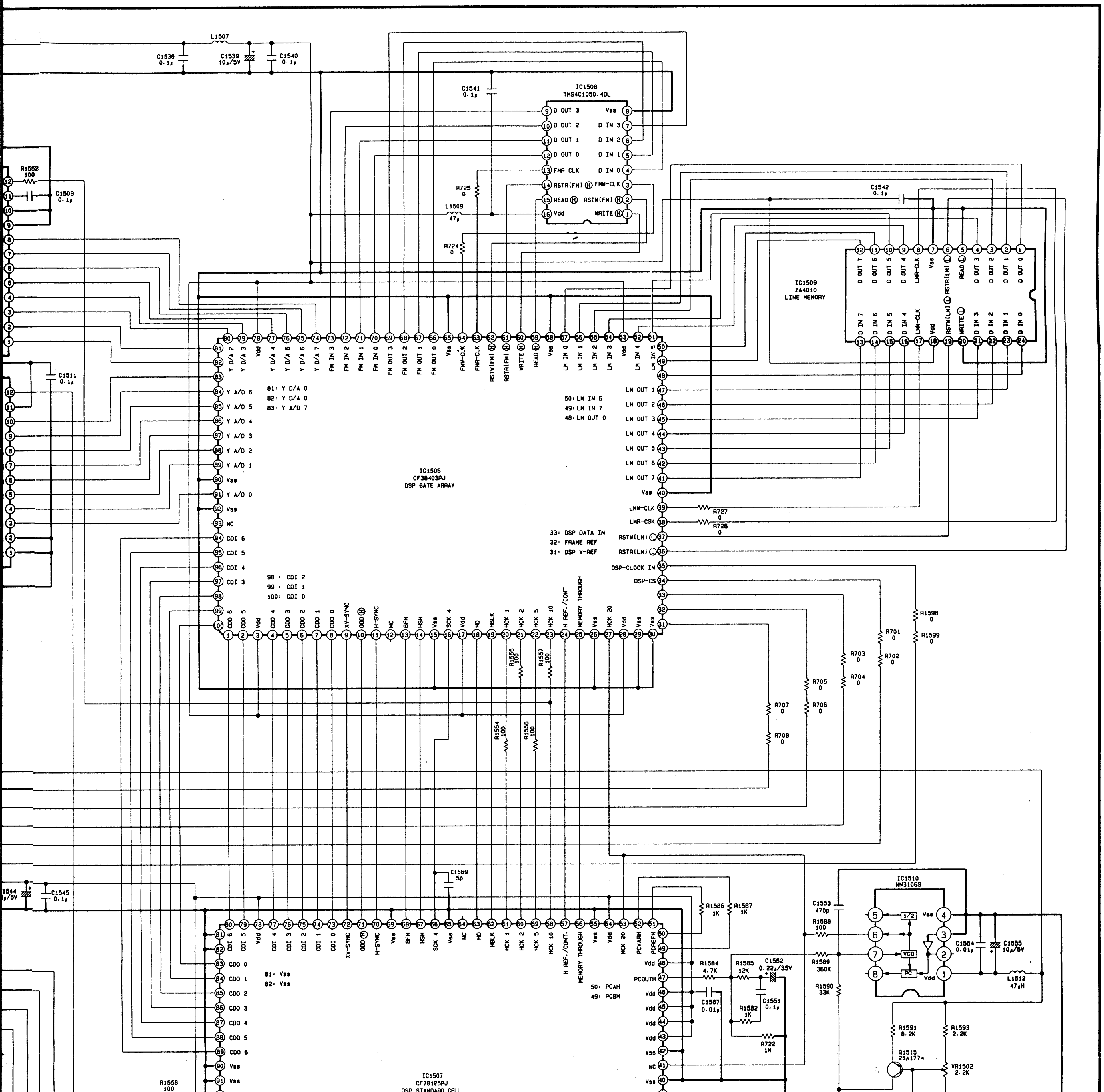
SYSCON-SERVO P.C.B.(3/4) (DIGITAL-SIGNAL-PROCESS SECTION)


TO RCTC SECTION
PB RF 92
REC RCTC-RF 94
AFTER REC Ⓗ 95
PB RCTC-RF 96
RCTC AREA 97
REC BIAS CONT. 98
GND 91
MASK 88
CN1501
1 REC BIAS CONT.
2 RCTC AREA
3 PB RCTC-RF
4 AFTER REC Ⓗ
5 REC RCTC-RF
6 HEAD SW PULSE
7 PB-RF
8 GND
9 HEAD SW PULSE(V.A)
10 SC
11 COMB ON Ⓛ
12 UNREG 6V
13 UNREG 6V
14 ME Ⓗ/MP Ⓛ
15 C(DSP IN)
16 GND
17 GND
18 C(DSP OUT)
19 LINE Ⓗ/CAMERA Ⓛ
20 GND
21 Y(DSP IN)
22 HiMP Ⓗ
23 MASK
24 Y(DSP OUT)
TO VIDEO P.C.B. CN204
TO SYSCON SECTION
HEAD SW PULSE 13
LINE Ⓗ/CAMERA Ⓛ 102
COMB ON Ⓗ 93
GND 70
HiMP Ⓗ 2
ME Ⓗ/ME Ⓛ 3
TO SERVO SECTION
HEAD SW PULSE 99
DSP ON Ⓛ 47
UNREG 6V 4
HEAD SW PULSE 13
DSP V REF. 44
FRAM E REF 42
DSP-DATA 46
DSP-CS 40
DSP-CLOCK 45
IC1501 LVC556FA2
REGURET CONT.
EXT BIAS DRIVE
Vss
L1501
R1502 470
R1501 1K
Q1501 2SB1412F5
C1503 22μ/5V
C1504 0.01μ
R1504 1K
Q1502 2SA1774
R1503 1K
FL1501 SZV258N
FL1502 SZV258N
VR1503 220
R711 100
Q1503 2SA1774
R1505 1K
R1506 680
R1508 470
C1505 0.1μ
R1509 470
C1506 10μ/5V
C1507 0.01μ
C1508 0.01μ
L1502
IC1502 CXD1171M
Vss
Vss
I-REF
V-REF
VG
Vdd
Vdd
DA OUT
Vss
Vdd
Vdd
Vdd
YDA-CLOCK
VB
Vss
BLK
D IN 7
D IN 6
D IN 5
D IN 4
D IN 3
D IN 2
D IN 1
D IN 0
R1510 3.3K
C1510 100K
L1513 1μH
C1572 47p
R1552 100
C1509 0.1μ
C1538 0.1μ
R1524 1.1K
FL1503 H366.1459
C1519 10μ/5V
C1518 0.01μ
R712 1K
R1522 1K
Q1504 IMT2
C1517 10μ/5V
C1516 100p
R709 180
R1523 1K
R1520 820
R1519 300
Q1505 IMZ1
R1521 680
R1518 1K
R1517 3.9K
R1516 470
Q1506 IMT2
R1513 5.6K
Q1507 IMZ1
R1515 220K
R1514 47
R1512 1K
R1511 100
C1514 10μ/5V
C1513 0.01μ
C1512 0.1μ
C1515 0.1μ
L1503
C1511 0.1μ
IC1503 CXD1175AM
Vdd
Vdd
Vdd
VRTS
VRT
Vdd
Vin
Vss
Vss
VRBS
VRB
Vss
YAD-CLK
Vdd
D OUT 7
D OUT 6
D OUT 5
D OUT 4
D OUT 3
D OUT 2
D OUT 1
D OUT 0
Vss
OE
C1521 0.01μ
R1596 10K
C1520 0.1μ
R1597 4.7K
Q1508 2SA1774
IC1504 NJM2406F
GND
V+
L1510
C1543 0.1μ
C1544 10μ/5V
C1545 0.1μ
L1504
R1525 39K
R1528 1K
C1525 0.01μ
R1529 2.2K
C1524 0.01μ
Q1509 2SC4617
FL1504 H364BAI.1462
C1526 0.01μ
C1565 0.01μ
Q1510 2SC4617
R1532 3K
Q1511 IMZ1
C1527 0.01μ
L1505
R1536 1.5K
C1529 10μ/5V
R710 0
R1537 1.5K
C1528 0.1μ
C1531 0.1μ
IC1505 CXD1172AM
Vdd
Vdd
VRT
VIN
VRB
Vdd
Vdd
Vss
Vss
CAD-CLK
D OUT 5
D OUT 4
D OUT 3
D OUT 2
D OUT 1
D OUT 0
C1522 10μ/5V
C1523 0.01μ
R1526 18K
R1527 470
R718 680
R1530 1.8K
R1531 1K
R1533 8.2K
R1534 4.7K
R1535 0
C1530 0.1μ
R1558 100
Q1512 2SC4617
R1540 2.2K
C1532 0.01μ
FL1505 SZV35AN
C1533 0.01μ
R1542 1K
R1541 1.8K
Q1517 2SC4617
R714 1K
R1539 33K
Q1518 2SC4617
C1568 0.01μ
R716 1K
R713 1.3K
C1563 0.01μ
R719 1K
R1538 1K
R715 27K
C1564 0.01μ
L1506 10μH
R1543 33K
R1545 470
R1546 3.3K
C1536 110p
R1550 27K
C1535 56p
C1557 0.01μ
Q1514 2SC4617
Q1513 IMX2
VR1504 3.3K
C1534 0.01μ
R1544 22K
R1547 470
R1548 270
R1549 33K
R1551 1K
C1537 0.01μ
R1560 4.7K
IC1501
IC1505
IC1502
IC1503

TION)


IC1508
TMS4C1050.4DL
IC1509
ZA4010
LINE MEMORY
IC1506
CF38403PJ
DSP GATE ARRAY
IC1507
CF78125PJ
DSP STANDARD CELL
IC1510
MN3106S
Q1515
2SA1774
L1507
L1509
L1512
C1538
C1539
C1540
C1541
C1542
C1509
C1511
C1545
C1553
C1554
C1555
C1567
C1569
C1549
C1566
C1570
C1546
C1548
C1556
C1571
R1552
R725
R724
R727
R726
R701
R702
R703
R704
R705
R706
R707
R708
R1598
R1599
R1554
R1555
R1556
R1557
R1558
R1560
R1561
R729
R1562
R1563
R1564
R1565
R1566
R1567
R1568
R1569
R1570
R1571
R1572
R1573
R1574
R1575
R721
R1576
R1577
R1578
R1584
R1585
R1582
R722
R1586
R1587
R1588
R1589
R1590
R1591
R1592
R1593
R1594
VR1502

S-S P.C.B. (3/4) DSP SECTION

IC1503 IC1506 IC1507 IC1508 IC1510 IC1509

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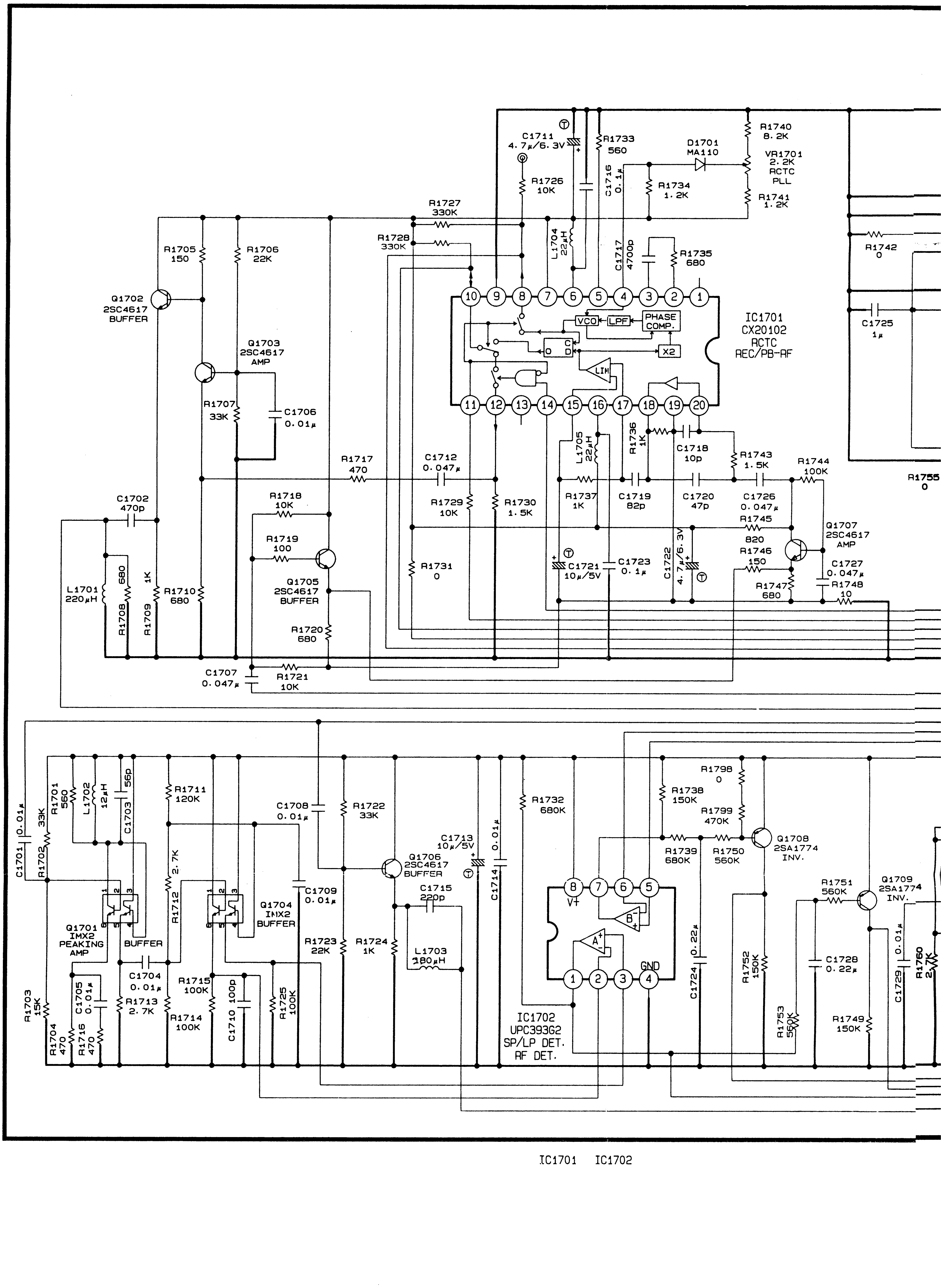
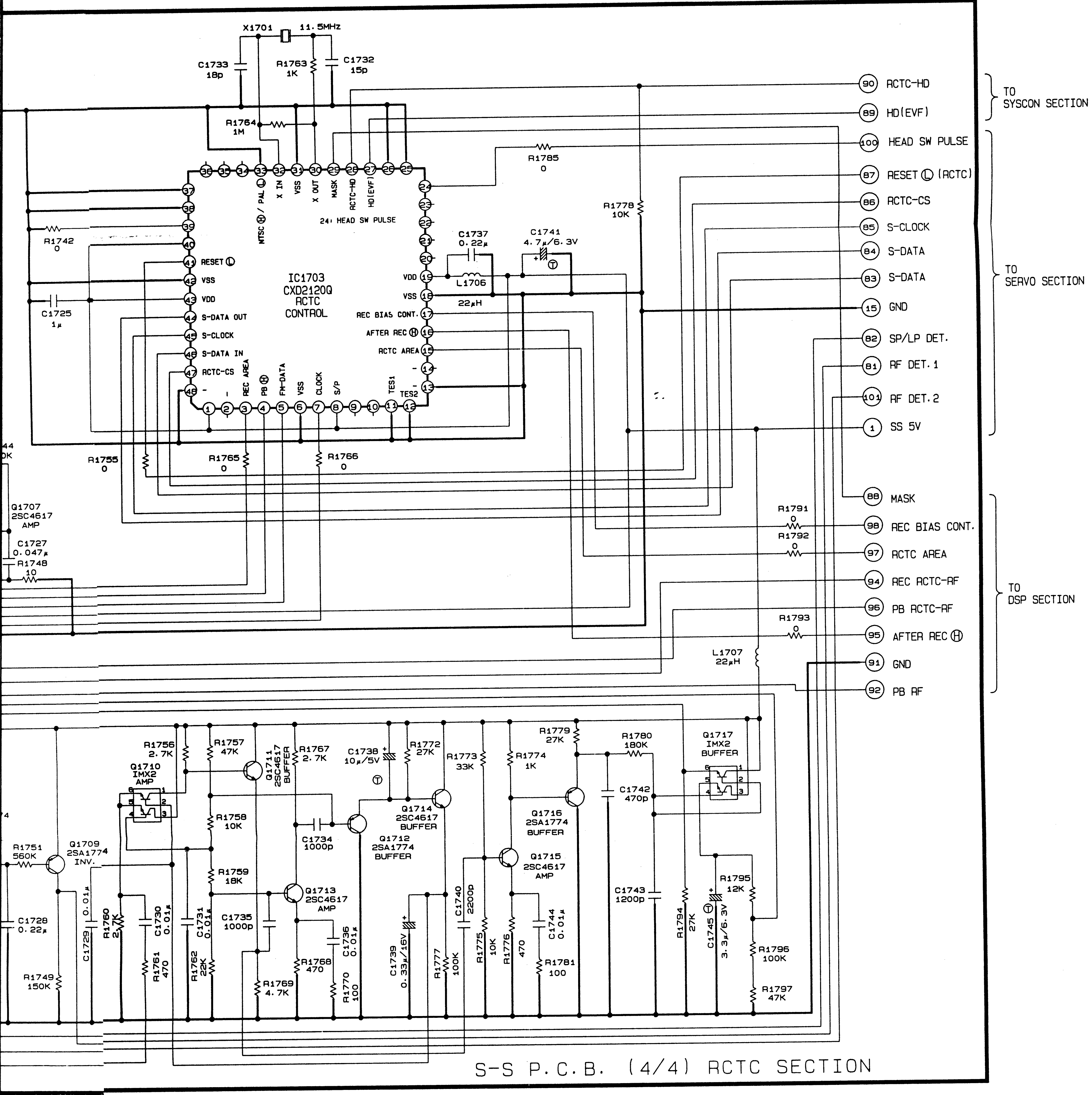
SYSCON–SERVO P.C.B.(4/4) (RCTC SECTION)


C1711
4.7µ/6.3V
R1733
560
D1701
MA110
R1740
8.2K
VR1701
2.2K
RCTC
PLL
R1726
10K
C1716
0.1µ
R1734
1.2K
R1741
1.2K
R1727
330K
R1728
330K
L1704
22µH
C1717
4700p
R1735
680
R1705
150
R1706
22K
R1742
0
Q1702
2SC4617
BUFFER
VCO
LPF
PHASE
COMP.
IC1701
CX20102
RCTC
REC/PB-RF
C1725
1µ
Q1703
2SC4617
AMP
X2
LIM
R1707
33K
C1706
0.01µ
L1705
22µH
R1736
1K
C1718
10p
R1717
470
C1712
0.047µ
R1743
1.5K
R1744
100K
R1755
0
R1718
10K
C1702
470p
R1729
10K
R1730
1.5K
R1737
1K
C1719
82p
C1720
47p
C1726
0.047µ
R1745
820
Q1707
2SC4617
AMP
R1719
100
C1721
10µ/5V
C1723
0.1µ
C1722
4.7µ/6.3V
R1746
150
R1731
0
C1727
0.047µ
R1748
10
L1701
220µH
R1708
680
R1709
1K
R1710
680
Q1705
2SC4617
BUFFER
R1747
680
R1720
680
C1707
0.047µ
R1721
10K
C1701
0.01µ
R1702
33K
R1701
560
L1702
12µH
C1703
56p
R1711
120K
C1708
0.01µ
R1722
33K
R1732
680K
R1798
0
R1738
150K
R1799
470K
C1713
10µ/5V
C1714
0.01µ
Q1706
2SC4617
BUFFER
R1739
680K
R1750
560K
Q1708
2SA1774
INV.
R1712
2.7K
C1709
0.01µ
C1715
220p
V+
B
A
R1751
560K
Q1709
2SA1774
INV.
Q1701
IMX2
PEAKING
AMP
BUFFER
Q1704
IMX2
BUFFER
R1723
22K
R1724
1K
L1703
180µH
GND
C1724
0.22µ
R1752
150K
C1728
0.22µ
C1729
0.01µ
R1760
2.7K
C1704
0.01µ
R1715
100K
C1710
100p
R1725
100K
R1703
15K
C1705
0.01µ
R1713
2.7K
R1714
100K
R1704
470
R1716
470
IC1702
UPC393G2
SP/LP DET.
RF DET.
R1753
560K
R1749
150K

IC1701 IC1702


X1701
11.5MHz
C1733
18p
R1763
1K
C1732
15p
R1764
1M
IC1703
CXD2120Q
RCTC
CONTROL
NTSC Ⓗ / PAL Ⓛ
X IN
VSS
X OUT
MASK
RCTC-HD
HD(EVF)
24: HEAD SW PULSE
RESET Ⓛ
VSS
VDD
S-DATA OUT
S-CLOCK
S-DATA IN
RCTC-CS
REC AREA
PB Ⓗ
FM-DATA
VSS
CLOCK
S/P
TES1
TES2
VDD
VSS
REC BIAS CONT.
AFTER REC Ⓗ
RCTC AREA
R1742
0
C1725
1μ
R1785
0
C1737
0.22μ
C1741
4.7μ/6.3V
L1706
22μH
R1778
10K
R1755
0
R1765
0
R1766
0
RCTC-HD
HD(EVF)
HEAD SW PULSE
RESET Ⓛ (RCTC)
RCTC-CS
S-CLOCK
S-DATA
S-DATA
GND
SP/LP DET.
RF DET. 1
RF DET. 2
SS 5V
MASK
REC BIAS CONT.
RCTC AREA
REC RCTC-RF
PB RCTC-RF
AFTER REC Ⓗ
GND
PB RF
TO
SYSCON SECTION
TO
SERVO SECTION
TO
DSP SECTION
R1791
0
R1792
0
R1793
0
L1707
22μH
Q1707
2SC4617
AMP
C1727
0.047μ
R1748
10
R1756
2.7K
R1757
47K
Q1710
IMX2
AMP
Q1711
2SC4617
BUFFER
R1767
2.7K
C1738
10μ/5V
R1772
27K
R1773
33K
R1774
1K
R1779
27K
R1780
180K
Q1717
IMX2
BUFFER
R1758
10K
C1734
1000p
Q1714
2SC4617
BUFFER
Q1712
2SA1774
BUFFER
Q1716
2SA1774
BUFFER
C1742
470p
R1751
560K
Q1709
2SA1774
INV.
R1759
18K
Q1713
2SC4617
AMP
Q1715
2SC4617
AMP
C1743
1200p
R1795
12K
C1728
0.22μ
C1729
0.01μ
R1760
2.7K
C1730
0.01μ
C1731
0.01μ
C1735
1000p
C1736
0.01μ
C1739
0.33μ/16V
C1740
2200p
R1775
10K
R1776
470
C1744
0.01μ
R1794
27K
C1745
3.3μ/6.3V
R1796
100K
R1749
150K
R1761
470
R1762
22K
R1769
4.7K
R1768
470
R1770
100
R1777
100K
R1781
100
R1797
47K

S-S P.C.B. (4/4) RCTC SECTION

IC1703